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THE IMPACT OF POLITICAL VIOLENCE ON MARKETING
DEVELOPMENT IN SOUTH VIETNAM:

1955 THROUGH 1972

by

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ABSTRACT OF DISSERTATION
The University of Alabama Graduate School

Degree Doctor of Philosophy Major Subject Marketing

Name of Candidate William Roy Crawford

Title of Thesis The Impact of Political Violence on Marketing Development in South Vietnam: 1955 Through 1972

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The major purpose of this study is to measure the impact of political violence on the national marketing system of South Vietnam from 1955 through 1972, a development period in which the frequency and intensity of political violence continually changed. Heretofore, marketing development studies have focused on the role of marketing in the development process, while political environment has been largely ignored. Contemporary political violence is a prevalent phenomenon throughout the world today, especially in less-developed countries such as South Vietnam.

↳ The central theme ^{of this dissertation} is that political violence altered the normal pattern of marketing development by depressing or stagnating the growth of some economic sectors while accelerating the growth of other sectors. The major research question is:

What was the impact of political violence on national marketing development in South Vietnam from 1955 through 1972?

Three closely related areas addressed include: the impact of political violence on the development of an infrastructure to support marketing operations and middlemen, the production of key agricultural commodities, and patterns of consumption.

The two major subjects, political violence and marketing development, are measured using annual aggregate indicators of political violence.

Abstract Approved by: Chairman of Thesis Committee [Signature] section p. 12

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Date _____ Dean of Graduate School _____

events, sector employment, GNP, GDP, physical output, and per capita consumption, the selection of which is rationalized. The impact of political violence on marketing development and related areas is measured for the development period and for three inclusive political violence periods, "pre-insurgency" 1955 through 1960; "insurgency" 1961 through 1964; and "limited war" 1965 through 1972.

Multiple regression analysis is the major statistical tool used. Thirty-six important criterion variables which are associated with the four research questions are used in four corresponding series of multiple regression models as the dependent variables. The explanatory variables in these models consist of the following political violence event indicators: protest demonstrations, government sanctions, riots, armed attacks, and deaths from political violence. Also, a cumulative political violence events index is used separately as a predictor variable.

Two methodological questions implied by the multiple regression analysis, the rationale for separating the data into three political violence time periods, and the saturation or lag effect of political violence on marketing development and related areas, are also evaluated. Intercept and slope dummy variables are used as explanatory variables in the multiple regression models to test the homogeneity of the models. This provides a rationale for accepting or rejecting data separation of the examined years. Almon lag structures are developed from the "best fit" regression models to test the significant lagged periods of political violence on marketing development and related criterion variables.

Due to the number of research questions and the extensive analysis performed, the findings of the study are numerous. An analysis of the findings yielded the following selected conclusions:

1. Conventional measures indicate that marketing developed. The concentration of the development is in the "insurgency" and "limited war" periods. Political violence has a three to five year lagged period.
2. The finding of previous studies that marketing development tends to level off at higher levels of per capita GNP is confirmed.
3. Political violence energized the development of the tertiary sector and commercial sub-sector but depressed the wholesale and retail trade sub-sector. The strength of this development is concentrated in the "insurgency" and "limited war" periods while the depressing effect is in the "limited war" period. There is a four to seven year lag period before the impact of political violence is reflected in the tertiary sector and its sub-sectors.
4. Political violence stimulated the development of the infrastructure with a few exceptions. The energized areas are transportation, communications, banking, marketing middlemen, and utilities. This growth is generally centered in the "pre-insurgency" and "limited war" periods. The depressed areas are rail service, postal service, and small business firms. The lag effect of political violence is reflected in most infrastructure variables in the fifth year.
5. Political violence stimulated the production and distribution of all key agricultural commodities except rubber. The energizing and depressing effects are

concentrated in the "pre-insurgency" and "limited war" periods. The lag effect of political violence on these indicators is in the fifth year.

6. Political violence promoted increased consumption with a few exceptions. Increases in consumption occurred most dramatically during the "insurgency" and "limited war" periods. The consumption of rice, pork, and pharmaceuticals was depressed. The lag effect of political violence is reflected in most consumption variables in the fifth year.
7. The test for the homogeneity of the slopes and intercepts shows that, in most cases, the data should be divided into three political violence time periods. The lagged periods range from two to seven years.
8. Armed attacks and deaths from political violence are generally the most potent political violence explanatory variables in the ordinary least squares (OLS) models, which corresponds with previous studies. The cumulative political violence indicator is more significant in the OLS models than any other political violence indicator.
9. The strength of the political violence dummy variables did not carry through from the OLS models. Government sanctions and riots are the most potent explanatory variables in the dummy variable models. The cumulative political violence events index is a weak explanatory variable in these models.

10. Riots and armed attacks are the most potent explanatory variables in the "pre-insurgency" period. There is no distinguishable pattern of potency among the political violence variables during the "insurgency" period. Government sanctions, armed attacks, and riots are the most potent explanatory variables during the "limited war" period.

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A DISSERTATION

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for the degree of Doctor of Philosophy in
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the Graduate School of Business in
The University of Alabama

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CHAPTER I

INTRODUCTION AND BACKGROUND

Warfare subjects an economy to severe strains. These strains are manifested in the economic changes coincident with war. Millions of people change occupations. New industries are born and the output of old industries is expanded. The development and construction of an infrastructure of utilities, transportation and communications networks receive high national priorities. The production and distribution of goods and services for private consumption become secondary to the primary objective of producing and distributing war goods and services. The pace of all economic work is accelerated.¹ Generally, all nations, and particularly the less-developed² ones, lack the resources

¹D. W. Michener, "Wartime Prices" (Department of Financial and Business Research, Harvard University, 1941), p. 1.

²The typical less-developed country is characterized by an extremely low ratio of material to human resources. See Gustav Ranis, "Economic Growth, Theory II," in International Encyclopedia of the Social Sciences, ed. David L. Sills (United States: The MacMillan Company and The Free Press, 1968), Vol. 4, p. 415. Also see Harry A. Lipson and Douglas F. Lamont, "Marketing Policy Decisions Facing International Marketers in the Less-Developed Countries," Journal of Marketing, Vol. 33, No. 4 (October 1969), p. 24. This article specifies that less-developed countries have a per capita national income of less than \$500 per year.

necessary to satisfy both private and government demands for goods and services during a period of war. The emphasis on the production and distribution of economic goods in support of the war effort, along with the general over-all scarcity of resources, results in the major restructuring of a wartime economy.³

The economic impact of warfare on a country's economy is unique in each specific case. This is true because there is a wide range of violence in warfare which progresses in intensity through the following stages: civil disturbance, insurgency, limited war, and general war.⁴ The frequency and magnitude of the violence is not uniform throughout each category. Perhaps most importantly, each case of warfare presents a unique set of circumstances of geography, economic resources, forces, skills, organization, policy, strategy, technology and national resolve.⁵ This leads to the second

³George A. Steiner, ed., Economic Problems of War (New York: John Wiley and Sons, Inc., 1942, pp. 1/1-1/4.

⁴The following terms and definitions are coordinated by the Joint Chiefs of Staff for use in the Department of Defense. Civil disturbance--Group acts of violence and disorder prejudicial to public law and order. Insurgency--A condition resulting from a revolt or insurrection against a constituted government which falls short of civil war. Limited war--Armed conflict short of general war, exclusive of the incidents, involving the overt engagement of the military forces of two or more nations. General war--Armed conflict between major powers in which the total resources of the belligerents are employed, and the national survival of a major belligerent is in jeopardy. U.S. Department of Defense, Dictionary of Military and Associated Terms, The Joint Chiefs of Staff, JCS Pub. No. 1 (Washington, D.C.: Government Printing Office, 1974), pp. 66, 148, 175, 194.

⁵Steiner, Economic Problems of War, pp. 1/1-1/4.

truism, that the capabilities of each nation to respond to a war situation are not uniform and are also unique to the particular country involved in warfare.⁶ However, some similarities have been noted in the varieties and incidence of contemporary violence which reflect warfare.

The character of warfare since World War II "...has been unusually violent both in a general sense, and more particularly in the realm of civil or internal strife."⁷ This period of violent warfare has been called by one writer "the insurgency era,"⁸ while another writer views civil or internal strife as commonplace and calls it "practically the essence of contemporary political life."⁹ This study concentrated on contemporary political violence¹⁰ and its impact on the economy of a less-developed country.

The contemporary political violence which has gripped the world since World War II has been both disruptive and deplorable, but it is not new. One author, for example,

⁶Ibid., p. 1/2.

⁷Richard M. Leighton, "The Varieties and Incidence of Contemporary Internal Violence" (Washington, D.C.: The Industrial College of the Armed Forces, 1974), p. 1.

⁸Richard H. Sanger, The Insurgent Era: New Patterns of Political, Economic, and Social Revolution (Washington, D.C.: Potomac Books, rev. ed., 1970), pp. 1-3.

⁹Harry Eckstein, Internal War: Problems and Approaches (New York: Free Press of Glencoe, 1964), p. 3.

¹⁰Political violence is defined as--all collective attacks within a political community against the political regime, its actors--including competing political groups as well as incumbents--or its policies. See Ted Robert Gurr, Why Men Rebel (Princeton, New Jersey: Princeton University Press, 1970), pp. 3, 4.

reported that there were 367 "revolutions" between 1900 and 1965. About 37 percent of these occurred after World War II for an average of 6.75 per year versus an annual average of 5.6 per year for the entire period.¹¹ This analysis did not consider the scope and intensity of these conflicts. In addition to not being new, political violence is largely internal. Few countries have been immune to some form of internal political violence. One study stated that some internal political violence occurred in 114 out of 121 countries between 1961 and 1968.¹² Mr. Robert S. McNamara, then Secretary of Defense, noted in 1966 that the predominance of political violence was internal in that only 15 out of 164 "internationally significant" outbreaks of violence over the past eight years had been conflicts between sovereign states.¹³ Political violence since World War II has been concentrated in the less-developed countries of the world. This is particularly true of the former French, Dutch, and Portuguese colonies, which have been immersed in post-colonial civil wars.¹⁴ Therefore, political violence is

¹¹Peter A. R. Calvert, "Revolution: The Politics of Violence," Political Studies, XV (No. 1, 1967), p. 1, cited in Ted R. Gurr, Violence in America: Historical and Comparative Perspectives, Report to the National Commission on the Causes and Prevention of Violence, June 1969 (New York: New American Library, 1969), p. 544.

¹²Gurr, Why Men Rebel, p. 3.

¹³U.S. Department of State, Department of State Bulletin (Washington, D.C.: Government Printing Office, 1966) LIV, 1406 (June 6, 1966), p. 876.

¹⁴Leighton, "The Varieties and Incidence of Contemporary Internal Violence," p. 3.

recurrent, it is largely internal and concentrated in the less-developed post-colonial countries of the world.

Political Violence and Economic
Change in South Vietnam

This study was concerned with the impact of political violence on the economy of a post-colonial less-developed country, the Republic of Vietnam (South Vietnam).¹⁵ South Vietnam was established on July 21, 1954, as a separate governing entity.¹⁶ This new country, which had been part of the French colonial empire of Indochina, became South Vietnam. Soon after the new country was established, it began to experience destabilizing, politically-violent events.

¹⁵Standard United Nations Yearbooks and the United States, Department of State, Bureau of Intelligence and Research refer to the Republic of Vietnam by its common state name, South Vietnam. The title South Vietnam was used in this study to refer to the Republic of Vietnam. See Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven, Connecticut: Yale University Press, 1972), p. 432.

¹⁶South Vietnam came into being as a result of circumstances following the Geneva Conference on Indochina. An agreement on the Cessation of Hostilities in Vietnam was signed on July 20 and 21, 1954, which, among other things, ended eight years of war with France and established a "Provisional Demarcation Line" across the State of Vietnam near the seventeenth parallel. Two zones were created. The zone south of the seventeenth parallel became the Republic of Vietnam, or South Vietnam, and the zone north of the seventeenth parallel became the Democratic Republic of Vietnam, or North Vietnam. This study was restricted to South Vietnam. For complete details on the agreement, see U.S. Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, 6th rev. ed., 91st Cong., 2d sess., (1970), pp. 139-153.

These events increased in frequency and magnitude¹⁷ until January 27, 1973, when a "cease fire" agreement was signed in Paris.¹⁸ This agreement was reputed to call a halt to the fighting in South Vietnam. However, the fighting continued until the eventual Communist takeover of South Vietnam on April 30, 1975.¹⁹ During the period 1955 through 1972, South Vietnam experienced dramatic changes in the magnitude and frequency of destabilizing political events and basic economic and social conditions.²⁰

¹⁷U.S. Library of Congress, Impact of the Vietnam War prepared for the use of Committee on Foreign Relations, U.S. Senate, 92nd Cong., 1st sess., (1971), pp. 1-34. Also see Appendix C.

¹⁸U.S. Department of State, Documentation on Viet-Nam Agreement (Washington, D.C.: Government Printing Office, 1973), pp. 32-85.

¹⁹"Vietnam: The War That Won't Stop," Copley News Service, San Diego, California, February 3, 1974, p. 1, and "Saigon Under the V C Flag: Reds in Orderly Takeover" Pacific Stars and Stripes, May 2, 1974, p. 1.

²⁰See U.S. Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, pp. 3-132, and U.S. Library of Congress, Impact of the Vietnam War, pp. 1-34.

In 1955, South Vietnam was a less-developed country²¹ in possession of a classic dualistic²² economy. The economy consisted of a large agricultural sector which was stagnant. This sector produced primarily subsistence crops while a small portion of its output passed through the market system. Investment capital for agriculture was scarce except in the small plantation subsector, technology was backward, and under-employment was prevalent.²³ There was a small modern market sector which consisted of light industries producing for domestic consumption--soft drinks, ice, beer, rubber products, matches, processed rice and sugar, electric power, and textile raw materials. There was an acute scarcity of investment capital, modern technology, and a skilled labor force required for growth and expansion of the modern market

²¹During the entire period from 1955 through 1972 per capita national income did not exceed \$250.00. In fact, during the peak year of 1970, per capita income in South Vietnam was \$232.00. See United Nations, Yearbook of National Account Statistics, 1972, Vol. III (New York: Publishing Service, United Nations, 1974), p. 6.

²²There are many models of economic dualism. Most agree on the concept of two sectors. The "modern" sector is receptive to change, market oriented, consists largely of light manufacturing and trade and has a scarcity of capital, skilled labor and technology. The agricultural or "traditional" sector is stagnant, produces for subsistence, markets little of its output, and is plagued with under-employment, an absence of capital and uses outdated technology. For a complete discussion of "dualism," see Keith Griffin, "Underdevelopment in Theory," The Political Economy of Development and Under-development, ed. Charles K. Wilber (New York: Random House, 1973), pp. 15-25.

²³United Nations, Toward the Economic Development of the Republic of Viet-Nam, Report of the Economic Survey Mission to the Republic of Viet-Nam (New York: Publishing Service, United Nations, 1959), pp. 31-155.

sector.²⁴ The infrastructure supporting the agricultural, industrial and commercial sectors of the economy was described as distinctly good for this area of the world.²⁵ The commercial portion of the modern market sector was significant in size and had been institutionalized. There were export-import, wholesaling, and retailing firms which had been organized into a distribution network utilizing the established public and private transportation and communications systems. Commercial banking, insurance and real estate firms were available to serve the modern market sector.²⁶

This small country in Southeast Asia became a symbol of a new kind of American involvement in world affairs. It was the focus of intense and bitter division of almost every facet of American society. The issues of south Vietnam and the American involvement introduced volumes of books, articles, speeches, commentaries, and journalism through every media. These reports focused on two major issues: the conduct of the war and the political and moral position of the United States and its Allies.²⁷ A third issue, in which

²⁴Ibid., pp. 156-177.

²⁵Ibid., pp. 182-214.

²⁶Ibid., pp. 24-28.

²⁷David E. Lilienthal, "Postwar Development in Viet-Nam," Foreign Affairs, Vol. 47, no. 2 (January, 1969), p. 320.

relatively few people have shown an interest, is the impact of political violence on the economy of South Vietnam.²⁸

Whether the people of South Vietnam prospered or became permanent economic dependents, and how the Vietnamese could construct a viable nation in South Vietnam were issues rarely discussed. These issues became known as the "other war"²⁹ which was the efforts of the South Vietnamese people to build a modern and viable nation with the help of her Allies.

In addition to the major deterrents to economic development³⁰ with which each less-developed country must deal, South Vietnam was also confronted with a constant increase in the frequency and intensity of politically violent events

²⁸Limited analysis of the impact of the war on the economy of South Vietnam is contained in the several post-war development plans and symposiums. See Joint Development Group, the Postwar Development of the Republic of Vietnam (New York: Praeger Publishers, 1970), and "Viet-Nam's Post-war Development: A Symposium," Asian Survey, Vol. XI, No. 4 (April 1971).

²⁹Robert W. Komer (Special Assistant to the President, Washington, D.C., The White House), "The Other War in Vietnam: A Progress Report to the President," (September 17, 1966), p. 1.

³⁰In most countries of the world today there is occurring a continuing rise in average per capita income made possible by continuing increases in per capita productivity. The phenomenon has been called economic growth or, when account is taken also of the changes in economic and social structure that accompany it, economic development. See Everett E. Hagen, The Economics of Development (Homewood, Illinois: Richard E. Irwin, Inc., 1975), pp. 3-6.

from 1955 through 1972.³¹ The political violence was directed against the people of South Vietnam and their economy. Mr. Robert W. Komer, Special Assistant to President Lyndon B. Johnson, stated in a report to the President in late 1966 that:

Aside from all the difficulties which face any new developing country, the Vietnamese people are seeking to build a modern nation against a background of terror, harassment and aggression mounted by a determined enemy--from both within and without. This enemy seeks to throttle Vietnam's economy by systematic disruption of its transport, communications, and commerce.³²

He emphasized through this report the harsh effects which the war had made upon the Vietnamese economy, particularly in the destruction of the infrastructure of transportation, communications and utilities. Also singled out for special notation were the systematic disruption of the flow of economic goods, attacks on farmers, and the induction of rural laborers into the ranks of the enemy forces.³³ In 1962, when the frequency and magnitude of political violence was low relative to later war years, one writer concluded that ". . . under guerrilla warfare conditions, economic development is difficult, if not

³¹Among many references, see the following: U.S. Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, pp. 3-132; U.S. Library of Congress, Impact of the Vietnam War, prepared for the use of the Committee on Foreign Relations, U.S. Senate, 92nd Cong., 1st sess. (1971), pp. 1-34, and Appendix C.

³²Komer, "The Other War in Vietnam: A Progress Report to the President," p. 1.

³³Ibid., pp. 2-10.

impossible."³⁴ Another author in this same period noted that "A government literally besieged is not likely to be systematic in its economic development."³⁵ By 1968, the devastation and destructive effects of the war on the Vietnamese economy had been monumental. In a report on the economic effects of the Vietnam war on the Southeast Asia area, it was stated that:

. . . the first and foremost among the economic effects of the war has been the destruction of the economy of Vietnam. It is hardly possible any longer to talk of such economy; the cities and the major towns exist as economic enclaves, feeding as best they can off the neighboring countryside but otherwise supplied with the necessary goods for survival under aid.³⁶

The impact of the war on the economy of South Vietnam was not destructive entirely. A Library of Congress study, Impact of the Vietnam War, prepared for the Senate Foreign Relations Committee in 1971, concluded that the war had two major effects on the economy of South Vietnam.

First, the economy has been seriously distorted by the burden of military spending, rampant inflation, physical destruction, and population dislocation. On the other hand, many sectors of the economy have been modernized as a result of wartime activities.³⁷

³⁴James B. Hendry, "Economic Development Under Conditions of Guerrilla Warfare: The Case of Viet-Nam," Asian Survey, Vol. II, No. 4 (June 1962), p. 12.

³⁵Lloyd D. Musolf, "Public Enterprise and Development Perspectives in South Vietnam," Asian Survey, Vol. III, No. 8 (August 1963), p. 366.

³⁶The Economist Intelligence Unit, The Economic Effects of the Vietnamese War in East and Southeast Asia (London: The Economist Intelligence Unit, 1968), p. 1.

³⁷U.S. Library of Congress, Impact of the Vietnam War, p. 32.

The working papers issued by the joint United States and Vietnamese development planning group³⁸ emphasized the impact of the war on inflationary pressure, distortion of spending patterns reflecting defense spending, war refugees moving to the cities for security reasons, and the disruptive effects of the war on agriculture. This group also pointed to the beneficial effects of the war on the economy. In particular, they cited the infrastructure development of roads, harbors, airfields, the legacy of a relatively trained labor force, and the absence of a large external war debt as economic benefits of the war.³⁹ The impact of the war on the economy of South Vietnam was thought to be destructive in many areas and beneficial in only a few.

General Economic Change

There were dramatic changes in the economy of South Vietnam over the period 1955 through 1972. In order to put the impact of the war on the economy of South Vietnam in a more precise perspective, some key economic indicators which reflect these changes are worth noting. The growth of the economy as reflected in expenditures on Gross National Product (GNP) at 1960 constant market prices was erratic. The GNP grew at an annual average rate of 3.8 percent from 1955 through 1960. During this first time period, there was a zero growth from 1955 to 1956. The annual average growth

³⁸Joint Development Group, The Postwar Development of the Republic of Vietnam, p. vii.

³⁹Ibid.

rate of the GNP increased to 5.0 percent during the second time period 1961 through 1964. During this second time period there was a negative annual growth of -.8 percent from 1960 to 1961. The largest annual increase in the entire period of this study was recorded from 1963 to 1964 when the annual increase in the GNP was 10.1 percent. The annual average growth rate of the GNP sharply declined to 2.5 percent during the third time period 1965 through 1972. There was negative growth during this period of -4.4 percent from 1967 to 1968 and -1.4 percent from 1971 to 1972. The peak growth for this period occurred when the annual growth reached 9.0 percent from 1964 to 1965.

If the average annual growth rate in GNP is presented on a per capita basis, which is essential in accounting for population growth, the growth rates for the three time periods were as follows: 1955 through 1960, 1.6 percent; 1961 through 1964, 4.5 percent; and 1965 through 1972, -1.0 percent.⁴⁰

The growth in the economy of South Vietnam, as reflected through the GNP, was low but reasonably consistent during the first time period 1955 through 1960. The rate of annual growth was somewhat higher during the second period but highly erratic as reflected by a period of negative growth and an extraordinary growth of 10.1 percent from 1963 to 1964. The rate of growth during the third time period was very low and unstable as reflected in two periods of negative

⁴⁰See Table 1.

growth mixed with several periods of high growth rates. The per capita average annual rate of growth in GNP for countries with per capita incomes of less than \$200 for the period 1960 through 1971 was 1.8 percent, and the aggregate growth in GNP was 3.9 percent.⁴¹ In south Vietnam the respective growth rates for this same period were 1.2 and 3.8 percent.⁴²

Sector Economic Change

The growth (or negative growth) pattern was not uniform among the sectors of the economy of South Vietnam from 1955 through 1972. The contributions of each sector and sub-sector to Gross Domestic Product (GDP) at factor cost has been calculated for the three time periods to demonstrate the uneven growth patterns in the economy of South Vietnam. The "value added"⁴³ to the GDP by the primary sector consisting of agriculture, animal husbandry, forestry, and fishing increased from 24.7 percent in 1955 to 34.3 percent in 1960. The contributions of this sector to GDP increased from 1955 through 1960 but began to decline in 1960 and had shrunk to 32.0 percent at the end of 1964. The average annual contribution of the primary sector to GDP during the time period

⁴¹Everett E. Hagen, The Economics of Development (Homewood, Illinois: Richard D. Irwin, Inc., 1975), p. 24.

⁴²See Table 1.

⁴³Utilizing the "value added" approach we avoid double counting by taking care to include in the calculation only final goods and services, and not the intermediate goods that go to make the final goods. We record wages, interest, rent and profit exactly one time as the value added to the output of that sector. See Paul A. Samuelson, Economics, 9th ed. (New York: McGraw-Hill Book Company, 1973), pp. 184-186.

TABLE 1
PER CAPITA GROSS NATIONAL PRODUCT (GNP) AT
1960 CONSTANT PRICES IN SOUTH VIETNAM

Year	National Population (000)	Gross National Product (GNP) (000,000 VN\$)	Per Capita Gross National Product (VN\$) (Code PCGNP102)
1955	12,044	68,072 ^a	5,652
1956	12,366	68,071 ^a	5,504
1957	13,052	71,504 ^b	5,478
1958	12,935	74,937 ^b	5,793
1959	13,789	78,370 ^b	5,684
1960	14,072	81,805	5,813
1961	14,494	81,165	5,600
1962	14,275	88,756	6,218
1963	14,133	89,990	6,367
1964	14,359	99,064	6,899
1965	15,024	107,966	7,186
1966	15,112	108,487	7,178
1967	16,256	110,673	6,778
1968	16,259	105,804	6,507
1969	16,543	110,183	6,660
1970	17,333	117,539	6,781
1971	18,708	121,659 ^c	6,503
1972	19,213	119,986 ^c	6,245

SOURCES: Data regarding national population are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 357.

Data regarding the GNP for 1955 to 1956 are adapted from U.S. Operations Mission to Vietnam, Annual Statistical Bulletin, 1959 (Saigon: U.S. Operations Mission to Vietnam, 1960), p. 15.

Data regarding the GNP for 1960 to 1962 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), p. 287.

Data regarding the GNP for 1963 to 1964 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1970

TABLE 1--Continued

(Saigon: National Institute of Statistics, 1971),
p. 139.

Data regarding the GNP for 1965 through 1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 271.

^aThe GNP data for 1955 and 1956 have been converted to 1960 constant prices using an average of the general whole-sale and retail price indices. Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 343, 351, 353.

^bGNP data are estimated from 1956 and 1960 data.

^cGNP data for 1971 and 1972 are provisional.

1965 through 1972 was 32.5 percent. The peak year was 1970 when the contribution of the primary sector to GDP reached 38.0 percent.⁴⁴

The secondary sector of mining and quarrying, manufacturing, construction, and utilities decreased its contribution to GDP from 16.2 percent in 1955 to 13.6 percent in 1960. The contribution of this sector averaged 14.2 percent during the time period 1961 through 1964. The contributions of the secondary sector to GDP declined over the time period 1965 through 1972 to an annual average of 10.3 percent. The lowest contribution of the secondary sector to GDP during this study occurred in 1969 when the contribution was only 8.1 percent.⁴⁵

The tertiary or service sector consisting of wholesale and retail trade, banking, finance and insurance, real estate, transportation, public administration and defense and services underwent the most dramatic change of any of the economic sectors. Initially, the contributions of this sector to GDP declined significantly from 59.1 percent in 1955 to 46.1 percent in 1960. The contribution of the tertiary sector to GDP grew steadily during the time period 1965 through 1972, for an annual average contribution to GDP of 55.8 percent. The peak year during this time period was

⁴⁴See Table 2.

⁴⁵Ibid.

TABLE 2
GROSS DOMESTIC PRODUCT (GDP) AT CURRENT FACTOR COST BY ECONOMIC SECTOR
(000,000 VND)

Year	Primary Sector			Secondary Sector						Commercial Sector		
	Gross Domestic Product (Code GDPCP103)	Agriculture, Animal Husbandry, Forestry and Fishery	Percentage of GDP	Mining and Quarrying	Manufacturing	Construction	Electricity, Water and Gas	Sector Total	Percentage of GDP	Wholesale and Retail Trade Sub-Sector ^d	Percent of GDP Contributed by the Wholesale and Retail Trade Sub-Sector ^d (Code PGDPM108)	Banking, Finance and Insurance
1955 ^a	64,264	15,873	24.7	-	-	-	-	10,411	16.2	-	11.7	-
1956 ^b	69,419	18,604	26.8	-	-	-	-	10,968	15.8	-	11.4	-
1957 ^b	70,416	20,209	28.7	-	-	-	-	10,773	15.3	-	11.1	-
1958 ^b	71,413	21,781	30.5	-	-	-	-	10,497	14.7	-	10.8	-
1959 ^b	72,410	23,461	32.4	-	-	-	-	10,282	14.2	-	10.5	-
1960	73,408	25,144	34.3	281	7,912	1,192	630	10,015	13.6	7,495	10.2	838
1961	74,189	24,830	33.5	276	8,749	1,101	692	10,818	14.6	7,826	10.5	816
1962	83,270	27,872	33.5	375	9,085	1,143	789	11,392	13.7	9,608	11.5	871
1963	89,316	28,758	32.2	316	10,264	1,276	895	12,751	14.3	10,266	11.5	1,034
1964	101,279	32,484	32.0	255	11,090	1,421	1,492	14,258	14.0	12,099	11.9	1,174
1965	129,553	37,425	28.9	299	13,775	1,807	1,209	17,090	13.2	14,388	11.1	1,586
1966	194,998	55,330	28.4	448	17,781	3,515	1,017	22,761	11.7	27,900	14.3	3,601
1967	290,353	102,012	35.1	1,709	19,555	3,102	1,107	24,973	8.6	42,599	14.7	6,140
1968	313,823	106,267	33.9	1,656	21,369	3,921	1,056	28,002	8.9	35,705	11.4	6,464
1969	453,783	157,553	34.7	1,669	25,503	7,697	2,067	36,936	8.1	65,765	14.5	7,185
1970	643,763	245,060	38.0	1,700	43,684	11,587	3,880	60,851	9.5	96,670	15.0	8,606
1971 ^c	921,000	276,300	30.0	-	-	-	-	101,310	11.0	-	17.1	-
1972 ^c	965,000	301,080	31.2	-	-	-	-	110,975	11.5	-	16.6	-

SOURCES: Data for 1955-1956 are adapted from U.S. Operations Mission to Vietnam, Annual Statistical Bulletin, 1959 (Saigon, U.S. Operations Mission to Vietnam, 1960), p. 13. Data for 1960-1962 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1968), p. 415.

Data for 1963-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1970 (Saigon: National Institute of Statistics, 1971), p. 141.

Data for 1967-1970 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 273.

Data for 1971-1972 are adapted from Republic of Vietnam, Four Year National Economic Development Plan, 1972-1975 (Saigon: Directorate General of Planning, 1972), pp. 329, 330.

^aEconomic sector percentage of GDP based on expenditures on GDP at market prices rather than GDP factor cost.

^bGDP data are estimated from 1956 and 1960 data.

^cData for 1971 and 1972 are based on estimates contained in Republic of Vietnam, Four Year National Economic Development Plan, 1972-1975 (Saigon: Directorate General of Planning, 1972), pp. 329, 330.

^dThe commercial sub-sector consists of banks, finance and insurance, real estate and wholesale and retail trade.

TABLE 2
 CURRENT FACTOR COST BY ECONOMIC SECTOR ORIGIN IN SOUTH VIETNAM
 (000,000 VND)

Tertiary Sector											Statistical Discrepancy	Percentage of GDP
Commercial Sub-Sector						Transportation	Public Administration and Defense	Services	Sector Total	Percentage of GDP Contributed by Tertiary Sector (Code PGDPT104)		
Year ended	Percent of GDP Contributed by the Wholesale and Retail Trade Sub-Sector (Code PGDPT108)	Banking, Finance and Insurance	Real Estate	Commercial Sub-Sector Total	Percent of GDP Contributed by the Commercial Sub-Sector (Code PGDPT106)							
1955	11.7	-	-	16,195	25.2	-	-	-	37,980	59.1	-	-
1956	11.4	-	-	17,007	24.5	-	-	-	39,847	57.4	-	-
1957	11.1	-	-	16,407	23.3	-	-	-	38,447	54.6	987	1.4
1958	10.8	-	-	15,783	22.1	-	-	-	36,992	51.8	2,143	3.0
1959	10.5	-	-	15,061	20.8	-	-	-	35,408	48.9	3,259	4.5
1960	10.2	838	5,645	13,978	19.0	3,588	11,581	4,727	33,874	46.1	4,375	6.0
1961	10.5	816	5,542	14,184	19.1	4,026	12,624	4,955	35,789	48.2	2,752	3.7
1962	11.5	871	6,065	16,544	19.9	4,127	16,246	5,540	42,457	51.0	1,549	1.8
1963	11.5	1,034	6,329	17,629	19.7	4,034	17,627	6,004	45,294	50.7	2,512	2.8
1964	11.9	1,174	6,947	20,220	20.0	4,162	21,356	6,849	52,887	52.3	1,650	1.7
1965	11.1	1,586	7,558	23,432	18.2	6,092	30,142	8,020	67,786	52.3	7,212	5.6
1966	14.3	3,601	12,295	43,796	22.5	8,251	47,239	13,417	112,703	57.8	4,204	2.1
1967	14.7	6,140	14,211	62,950	21.7	12,649	63,543	21,787	160,929	55.4	2,439	.9
1968	11.4	6,464	12,911	55,080	17.6	8,476	76,426	35,877	175,859	56.0	3,695	1.2
1969	14.5	7,185	17,240	90,190	19.9	17,740	108,836	41,603	258,369	56.9	1,925	.3
1970	15.0	8,606	26,367	131,543	20.4	22,477	130,695	49,361	334,176	51.9	3,676	.6
1971	17.1	-	-	200,778	21.8	-	-	-	543,399	59.0	-	-
1972	16.6	-	-	204,580	21.2	-	-	-	552,945	57.3	-	-

Operations Mission to Vietnam, 1960), p. 15.

Statistics, 1968), p. 415.

ics, 1971), p. 141.

ics, 1973), p. 273.

ate General of Planning, 1972), pp. 329, 330.

-1975 (Saigon: Directorate General of Planning, 1972), pp. 329, 330.

1971, when the contribution of the tertiary sector reached 59.0 percent of the GDP.⁴⁶

Some sub-sectors of the tertiary sector underwent particularly dramatic changes. The commercial portion of the tertiary sector declined from 25.2 percent of GDP in 1955 to 19.0 percent in 1960, and then increased to a peak of 21.8 percent of GDP in 1971.⁴⁷ For example, the contribution of the wholesale and retail trade sub-sector to GDP increased from 11.7 percent in 1955 to its highest point of 17.1 percent in 1971. The contribution of the public administration and defense sub-sector to GDP dramatically increased from 15.8 percent in 1960 to 20.3 percent in 1970.⁴⁸ There was a significant increase in the contribution of the services sub-sector to GDP which increased from 6.4 percent in 1960 to 7.7 percent in 1970. The contributions to growth in the economy of South Vietnam by each sector and sub-sector were not uniform throughout the period of this study.

Sector Employment Change

The shock effect of the war on the economy of South Vietnam can be clearly viewed through an examination of shifts in employment levels among the sectors of the economy. Employment in the primary sector averaged 84.0 percent of total employment during the period 1955 through 1960. The

⁴⁶Ibid.

⁴⁷Ibid.

⁴⁸See Table 2.

average annual employment in this sector declined to only 77.5 percent of total employment during the time period 1961 through 1964. Employment in the primary sector continued to decline during the time period 1965 through 1972. The average annual employment in the primary sector during this time period was only 67.0 percent of total employment. Employment in the primary sector reached a low point in 1970 when it was 64.6 percent of total employment.⁴⁹

Changes in employment in the secondary sector were also significant. Employment in this sector averaged 2.9 percent of total employment during the time period 1955 through 1960. Employment in the secondary sector averaged 3.2 percent annually from 1961 through 1964. During the time period 1965 through 1972 employment in the secondary sector averaged 4.5 percent annually.⁵⁰

Declines in employment levels in the primary sector were largely reflected in increased levels of employment in the tertiary sector. Employment in the tertiary sector increased as a percentage of total employment from 11.5 percent in 1955 to 14.2 percent in 1960. Employment in this sector averaged 13.1 percent annually from 1955 through 1960. Employment in this sector continued to increase and reached 23.0 percent of total employment in 1964. The annual average employment in the sector from 1961 through 1964 was 19.3 percent. The level of employment continued to increase in this sector

⁴⁹See Appendix A, Table 34.

⁵⁰See Appendix A, Table 35.

during the time period 1965 through 1972 during which the average annual percentage of total employment was 28.5 percent. During three years of this time period--1968, 1969, and 1970--employment in the tertiary sector was slightly over 30 percent of total employment.

Shifts in employment were not uniform throughout each sector. For example, in the primary sector, employment in fishing increased as a percentage of employment in that sector from 3.2 percent in 1955 to 6.6 percent in 1972. However, the employment in plantations declined as a percentage of primary sector employment from 1.0 percent in 1955 to .6 percent in 1972.⁵² There was a radical change in the level of construction employment in the secondary sector. Construction employment as a percentage of total secondary sector employment increased from 17.8 percent in 1955 to 38.6 percent in 1970, which was the peak year of construction employment.⁵³ There were also key employment level changes in the tertiary sector. Employment in the commercial sub-sector⁵⁴ as a percent of the tertiary sector total employment decreased from 17.0 percent in 1955 to 7.2 percent in 1972. The greatest increase in the employment level of this sector occurred in public administration and defense which increased

⁵¹See Appendix A, Table 36.

⁵²See Appendix A, Table 34.

⁵³See Appendix A, Table 35.

⁵⁴The commercial sub-sector consists of: wholesale and retail trade; banking, finance and insurance; and real estate.

from 43.9 percent of the sector's employment in 1955 to 74.7 percent in 1972.⁵⁵ Employment in services dramatically decreased from 28.8 percent of the sector's employment in 1955 to 9.9 percent in 1972.⁵⁶

The level of employment in the primary sector declined at an increasing rate over the period 1955 through 1972, while the level of employment in the secondary sector increased moderately and the level of employment in the tertiary sector increased dramatically. The shifts in employment were not smooth throughout each sector, reflecting the uneven impact of the war on the economy of South Vietnam.

Price Level Change

The drastic changes in the price levels in South Vietnam over the period of this study are well documented in the literature on the subject.⁵⁷ However, a short review of the magnitude of price level changes is in order. The general

⁵⁵See Appendix A, Table 36.

⁵⁶Ibid.

⁵⁷Almost without exception every analyst who has commented on the economy of South Vietnam has pointed to the effects of inflation. For example, the U.S. Congress, House Select Committee on United States Involvement in Southeast Asia, stated in its report in 1970 that, "Inflation is the most serious problem facing the country. Controlling inflation is highest on the list of priority economic objectives." Also, in the U.S. Library of Congress Report to the United States Senate, Committee on Foreign Relations in 1971, it was reported that the "... impact of inflation has been one of the most serious economic problems facing the Saigon Government." See U.S. Congress, House Select Committee, United States Involvement in Southeast Asia, 91st Cong., 2d sess. (1970), p. 6, and U.S. Library of Congress, Impact of the Vietnam War, United States Senate, Committee on Foreign Relations, 92d Cong., 1st sess., p. 33.

wholesale price index, based on 1949 = 100, increased from 177.3 at the end of 1955 to 187.6 at the end of 1960. This index reached 230.3 at the end of 1964. However, a near hyperinflation condition⁵⁸ was reflected in the phenomenal increase in this index to 1,208.8 by the close of 1972.⁵⁹ Similar increases were evident in the consumer price index (including rent, based on 1963 = 100) for working class families which increased from 80.3 at the end of 1955 to 85.0 at the end of 1960. This consumer price index reached 102.9 at the close of 1964, and continued to make record advances by increasing from 119.7 in 1965 to 973.3 by the end of 1972.⁶⁰ The price level increased gradually during the period 1955 through 1960, experienced moderate increases during the period 1961 through 1964 and increased at an accelerated rate over the period 1965 through 1972.

Sector Production Change

An analysis of the economic indicators which reflect changes in the economy of South Vietnam in response to the war effort is very enlightening. An examination of the

⁵⁸Hyperinflation is a condition of rapid rise in the price level. Production is disorganized, the wealth of large groups of the population is wiped out as money becomes worthless. Debtors attempt to pay off their obligations in worthless money. Speculators profiteer and buying is in panic in order to spend funds before another round of price increases occurs. One author notes that "... fortunately, there are few cases of hyperinflation except during war or in the backwash of war or revolution." See Paul A. Samuelson, Economics, p. 273.

⁵⁹Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 342.

⁶⁰Ibid., p. 353.

physical output of economic goods and services in the various sectors of the economy brings the impact of the war on the economy of South Vietnam in sharp focus.

In the primary sector, it should prove useful to examine the production of key agricultural commodities. The production of paddy (rice) increased from 2,767 thousand metric tons in 1955 to 4,955 thousand metric tons in 1960. Paddy production continued to increase slightly during the period 1961 through 1964 and reached 5,185 thousand metric tons in 1964. The average annual production of paddy for the period 1965 through 1972 was 5,215 thousand metric tons. However, the production during part of this period was low in that the average annual production of paddy from 1965 through 1968 was only 4,553 thousand metric tons.⁶¹ The production of raw rubber increased from 54.0 thousand metric tons in 1955 to 77.6 thousand metric tons in 1960, and declined slightly during the next time period from 1961 through 1964 to a level of 74.2 thousand metric tons in 1964. However, the production of rubber drastically declined during the time period 1965 through 1972 when the average annual production was only 38.6 thousand metric tons. Rubber production reached the lowest point during this study in 1972 when production was only 20.0 thousand metric tons.⁶² The production of tea and

⁶¹See Table 3.

⁶²Ibid.

TABLE 3
 PRODUCTION OF KEY AGRICULTURAL
 COMMODITIES IN SOUTH VIETNAM
 (000 METRIC TONS)

Year	Paddy (Rice) ^a (Code ANNPA301)	Rubber ^b (Code ANNRU302)	Tea ^c (Code ANNTE303)	Coffee ^d (Code ANNCO304)
1955	2,767	54.0	2.6	2.2
1956	3,412	59.4	3.8	2.5
1957	3,192	62.1	4.4	3.3
1958	4,235	71.7	3.4	2.5
1959	5,092	75.4	4.2	3.3
1960	4,955	77.6	4.5	2.9
1961	4,607	78.1	4.8	3.4
1962	5,205	77.9	4.5	3.1
1963	5,327	76.2	4.7	3.6
1964	5,185	74.2	5.4	3.4
1965	4,822	64.8	5.9	3.5
1966	4,337	49.5	5.2	3.1
1967	4,688	42.5	4.2	3.3
1968	4,366	34.0	4.8	3.3
1969	5,115	27.7	4.9	3.5
1970	5,516	33.0	5.5	3.9
1971	6,324	37.5	5.8	4.4
1972	6,348	20.0	5.1	3.9

SOURCES: Data for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1958), pp. 103, 104.

Data for 1957-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 89, 91, 96.

Data for 1967-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 301, 303, 308.

TABLE 3--Continued

^aPaddy is harvested rice in its unhusked form. The yield of polished rice from paddy is approximately 65 percent by weight of the paddy weight for South Vietnam.

^bProduction is raw rubber.

^cProduction is raw leaf tea.

^dProduction is raw coffee beans.

coffee was erratic but generally doubled during the time period 1955 through 1972.⁶³

Also in the primary sector, the fish catch sharply increased from 184 thousand metric tons in 1955 to 678 thousand metric tons in 1972.⁶⁴ Different sub-sectors of the primary sector responded differently to the war effort in terms of output. The production of paddy first increased then declined while the production of rubber sharply declined and the production of fish products sharply increased.

The scope and character of industrial production in the secondary sector increased during the period of this study. A general summary of this progress was reflected in the general industrial production index. The general industrial index increased from 100 in its base year of 1962 to 131.9 by the end of 1964. The index continued to increase during the period 1965 through 1972. The peak year was 1971 when the index reached 251.3. There was one decline in the index's growth in 1968 when it receded to 172.7.⁶⁵ Building construction output increased fantastically from 201 thousand square meters in 1955 to 653 thousand square meters in 1960. By 1964 the annual building area constructed was 1094 thousand square meters. The average annual level of building construction for the time period 1965 through 1972 was 1089

⁶³Ibid.

⁶⁴Republic of Vietnam, Vietnam Statistical Yearbook, 1972, p. 331.

⁶⁵See Table 4.

TABLE 4
INDEX OF INDUSTRIAL PRODUCTION IN SOUTH VIETNAM

Year	General Index (Weight 1,000.00) ^b (Code XGLPLP214)	Electricity (Weight 52.36)	Manufacturing (Weight 934.82)	Mining (Weight 12.82)
1962 ^a	100.0	100.0	100.0	100.0
1963	116.5	111.6	116.3	146.6
1964	131.9	128.7	132.5	102.3 ^c
1965	157.9	167.8	159.5	-
1966	170.8	173.8	173.0	-
1967	189.8	196.9	192.0	-
1968	172.7	186.6	174.2	-
1969	214.4	199.3	218.2	-
1970	244.8	288.8	245.6	-
1971	251.3	313.4	251.3	-
1972	238.4	347.3	235.6	-

SOURCES: Data for 1962-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 228-233.

Data for 1967-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 212-217.

^aBase year 1962 = 100.

^bWeights in the index are assigned based on 1962 values of production.

^cCoal mining, which was the total in the mining segment of the index, ceased operation due to internal violence conditions in 1965.

thousand square meters.⁶⁶ Production of utilities, particularly electricity, was greatly increased. The production of electric energy increased from 191.4 thousand kilowatt hours (KWH) in 1955 to 1,482.8 thousand KWH in 1972.⁶⁷

There were important changes in the capabilities and performance of infrastructure transportation and communication systems. In the automotive transport network, the number of motor vehicles in use increased from 59.7 thousand in 1955 to 281.7 thousand in 1971, the peak year. In the case of railway passenger/kilometers, the situation changed in each time period. For example, passenger/kilometers increased from 377,487 thousand in 1955 to 541,736 thousand in 1960. However, by 1964 the passenger/kilometer performance had declined to 124,635 thousand. This trend of decline continued and reached a low point of only 3,838 thousand passenger/kilometers in 1966. By 1970 the passenger/kilometer performance of the railway had recovered some to a level of 88,259 thousand. Air transportation capability and use increased over the period of the study as exemplified by the fact that domestic air passenger/kilometer use increased from 80,000 thousand in 1962 to 515,276 thousand in 1970. Coastwise shipping in commercial ports declined from 851.0 thousand metric tons in 1955 to 299.3 thousand metric tons in 1960 and then increased to a peak of 861.6 thousand metric

⁶⁶Republic of Vietnam, Vietnam Statistical Yearbook, 1972, p. 208.

⁶⁷See Table 5.

TABLE 5
ELECTRIC ENERGY PRODUCED AND CONSUMED IN SOUTH VIETNAM

Year	Per Capita Electric Energy Consump. (KWH) (Code PCEC213)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALELCPR0213C)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALELCPR0213C)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALELCPR0213C)
1955	13.5	1955 1Q	40,500	1961 1Q	76,700	1967 1Q	152,800
1956	13.7	2Q	49,000	2Q	79,200	2Q	175,500
1957	13.6	3Q	50,200	3Q	77,900	3Q	177,600
1958	15.0	4Q	51,700	4Q	81,000	4Q	177,100
1959	16.5	1956 1Q	52,200	1962 1Q	79,200	1968 1Q	150,900
1960	17.2	2Q	52,700	2Q	87,400	2Q	172,400
1961	18.0	3Q	51,400	3Q	88,400	3Q	190,600
1962	20.3	4Q	52,600	4Q	91,500	4Q	201,300
1963	23.0	1957 1Q	52,700	1963 1Q	86,700	1969 1Q	233,500
1964	27.1	2Q	55,500	2Q	98,000	2Q	271,100
1965	28.6	3Q	55,200	3Q	99,200	3Q	267,500
1966	35.2	4Q	57,400	4Q	102,500	4Q	273,200
1967	39.4	1958 1Q	57,300	1964 1Q	102,000	1970 1Q	236,800
1968	43.7	2Q	59,100	2Q	106,400	2Q	267,800
1969	53.4	3Q	59,600	3Q	110,300	3Q	316,400
1970	57.9	4Q	62,600	4Q	134,100	4Q	313,400
1971	58.6	1959 1Q	63,000	1965 1Q	114,000	1971 1Q	307,500
1972	61.2	2Q	67,600	2Q	129,100	2Q	348,400
		3Q	66,100	3Q	127,100	3Q	352,300
		4Q	70,300	4Q	151,800	4Q	334,700

TABLE 5--Continued

Year	Per Capita Electric Energy Consump. (KWH) (Code PCEEC213)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALECPR0213C)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALECPR0213C)	Year/ Quarter	Electric Energy Production (000 KWH) (Code REALECPR0213C)
		1960 1Q 2Q 3Q 4Q	69,300 73,100 74,000 71,500	1966 1Q 2Q 3Q 4Q	137,100 150,200 154,800 159,500	1972 1Q 2Q 3Q 4Q	338,400 368,400 384,800 391,200

SOURCES: Annual data for 1955-1960 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 210, 211.

Annual data for 1961-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 196, 197.

Quarterly data for first half 1955 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1956 (New York: The United Nations, 1956), p. 65.

Quarterly data for second half 1955 and first half 1956 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1957 (New York: The United Nations, 1957), p. 65.

TABLE 5--Continued

Quarterly data for second half 1956 and first half 1957 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1958</u> (New York: The United Nations, 1958), p. 65.
Quarterly data for second half 1957 and first half 1958 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1959</u> (New York: The United Nations, 1959), p. 65.
Quarterly data for second half 1958 and first half 1959 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1960</u> (New York: The United Nations, 1960), p. 65.
Quarterly data for second half 1959 and first half 1960 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1961</u> (New York: The United Nations, 1961), p. 67.
Quarterly data for second half 1960 and first half 1961 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1962</u> (New York: The United Nations, 1962), p. 65.
Quarterly data for second half 1961 and first half 1962 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1963</u> (New York: The United Nations, 1963), p. 75.
Quarterly data for second half 1962 and first half 1963 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1964</u> (New York: The United Nations, 1964), p. 75.
Quarterly data for second half 1963 and first half 1964 are adapted from Statistical Office of the United Nations, <u>Monthly Bulletin of Statistics, January 1965</u> (New York: The United Nations, 1965), p. 79.

TABLE 5--Continued

Quarterly data for second half 1964 and first half 1965 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1966 (New York: The United Nations, 1966), p. 87.

Quarterly data for second half 1965 and first half 1966 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1967 (New York: The United Nations, 1967), p. 89.

Quarterly data for second half 1966 and first half 1967 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1968 (New York: The United Nations, 1968), p. 89.

Quarterly data for second half 1967 and first half 1968 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1969 (New York: The United Nations, 1969), p. 93.

Quarterly data for second half 1968 and first half 1969 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1970 (New York: The United Nations, 1970), p. 101.

Quarterly data for second half 1969 and first half 1970 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1971 (New York: The United Nations, 1971), p. 101.

Quarterly data for second half 1970 and first half 1971 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1972 (New York: The United Nations, 1972), p. 101.

Quarterly data for second half 1971 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1973 (New York: The United Nations, 1973), p. 101.

TABLE 5--Continued

Quarterly data for first half 1972 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, July 1973 (New York: The United Nations, 1973), p. 101.

Quarterly data for second half 1972 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1974 (New York: The United Nations, 1974), p. 101.

tons in 1969.⁶⁸ The performance of communications service and print and broadcast media activities was erratic. As an example, domestic air post letters received and mailed increased from 4,800 thousand pieces of mail in 1955 to 13,560 thousand in 1959. They declined thereafter to only 8,066 thousand in 1962, after which there was a steady increase to a peak of 15,691 thousand pieces of mail in 1969.⁶⁹ The business activities of banking, finance, insurance and real estate all expanded their operations as evidenced by the number of firms participating in these businesses and their contribution to GDP. As an example, the number of checks presented to the clearing house for clearance steadily increased at an accelerated rate from 579,100 in 1955 to 4,185,700 in 1971 or an increase of 623 percent.⁷⁰

There were also major changes in the commercial sub-sector of the tertiary sector of the economy of South Vietnam during the period of this study. One of the major changes in this sub-sector was in the number and size of licensed businesses. The number of licensed businesses increased from 118.8 thousand in 1955 to 180.1 thousand in 1960. After 1960 the number of these businesses steadily declined, and by 1968 there were only 150.4 thousand licensed businesses. However, the number of licensed businesses began to increase in 1969, and by the end of 1971 there were 194.9 thousand licensed

⁶⁸See Table 6.

⁶⁹See Table 7.

⁷⁰See Table 8.

TABLE 6
PERFORMANCE OF SELECTED TRANSPORTATION
SYSTEMS IN SOUTH VIETNAM

Year	Number of Motor Vehicles in Use (000) (Code NCMVU201)	Railway Passenger/ Kilometers (000 Kilometers) (Code RPK202)	Domestic Air Passenger/ Kilometers (000 KM) (Code XDOAPK203)	Coastwise Shipping in Commercial Ports (000 Metric Tons) (Code CWSCP204)
1955	59.7	377,487	- ^a	851.0
1956	71.7	383,703	-	256.6
1957	72.1	435,075	-	215.4
1958	84.5	426,817	-	277.5
1959	90.7	514,583	-	252.8
1960	96.0	541,736	-	299.3
1961	93.7	583,121	-	234.7
1962	100.4	338,015	80,000 ^b	194.1
1963	106.4	229,932	90,000 ^b	385.2
1964	106.7	124,635	101,890	343.5
1965	113.5	14,046	209,328	407.9
1966	134.9	3,838	202,704	412.4
1967	171.3	12,814	319,236	628.5
1968	185.2	12,926	377,497	635.1
1969	214.0	71,481	501,793	861.1
1970	281.7	88,259	515,276	483.9
1971	244.0 ^b	85,657	377,350 ^b	410.5
1972	259.6 ^b	83,173 ^c	276,221 ^b	348.1 ^c

SOURCES: Data regarding coastwise shipping in commercial ports for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1958), p. 152.

Data regarding coastwise shipping in commercial ports for 1957 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1957 (Saigon: National Institute of Statistics, 1959), p. 156.

Data regarding coastwise shipping in commercial ports for 1958 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1958-1959 (Saigon: National Institute of Statistics, 1960), pp. 272-275.

TABLE 6--Continued

Data for 1955-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 163, 170, 186, 196.

Data regarding domestic air passenger/kilometers for 1967-1968 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), p. 107.

Data for 1967-1971 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 23, 30, 40, 45.

^aDomestic Air Passenger/Kilometers data were not reported for the time period 1955-1961. Only passenger arrivals and departures were reported for this time period.

^bData are estimated from petroleum consumption statistics.

^cData are estimated from previous performance.

TABLE 7
PERFORMANCE OF SELECTED COMMUNICATION SERVICE AND
PRINT AND BROADCAST MEDIA IN SOUTH VIETNAM

Year	Domestic Air Post Letters Received And Mailed (000) (Code DAPLR205)	Circulation of Daily News- papers (000) (Code XCODNP206)	Average Weekly Radio Broadcast Hours (Code XAVSRD207)
1955	4,800	- ^a	- ^a
1956	13,520	-	-
1957	11,943	-	-
1958	11,300	-	-
1959	13,560	-	-
1960	9,980	-	-
1961	8,372	-	-
1962	8,066	540	47
1963	8,961	1,110	55
1964	9,347	1,350	63
1965	13,410	775	71
1966	13,580	805	80
1967	14,230	800	75
1968	14,945	1,336	73
1969	15,691	1,222	104
1970	15,329	1,513	104
1971 ^b	14,825	1,542	98
1972 ^b	14,337	1,571	92

SOURCES: Data concerning domestic air post letters received and mailed for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), p. 197.

Data concerning domestic air post letters received and mailed for 1957-1971 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 49.

Data concerning circulation of daily newspapers and average weekly radio broadcast hours for 1962-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 153, 154.

TABLE 7--Continued

Data concerning circulation of daily newspapers for 1967-1971 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 89.

Data concerning average weekly radio broadcast hours for 1967-1969 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1970 (Saigon: National Institute of Statistics, 1971), p. 148.

Data concerning average weekly radio broadcast hours for 1970 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1970 (Saigon: National Institute of Statistics, 1971), p. 131.

Data concerning average weekly radio broadcast hours for 1971 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 89.

^aCirculation of daily newspapers and average weekly radio broadcast hours data were not reported for the time period 1955-1961.

^bData are estimated from previous performance.

TABLE 8
NUMBER OF CHECKS PRESENTED FOR CLEARANCE IN SOUTH VIETNAM

Year	No. of Checks (Code NCPFE208)	Year/ Quarter	No. of Checks (Code REALQTRNCPPFC208C)	Year/ Quarter	No. of Checks (Code REALQTRNCPPFC208C)	Year/ Quarter	No. of Checks (Code REALQTRNCPPFC208C)
1955	579,100	1955 1Q	144,498	1961 1Q	219,463	1967 1Q	419,287
1956	521,500	2Q	144,349	2Q	221,602	2Q	449,592
1957	553,000	3Q	143,704	3Q	235,301	3Q	478,380
1958	627,500	4Q	146,300	4Q	240,645	4Q	488,436
1959	715,900	1956 1Q	138,544	1962 1Q	227,192	1968 1Q	352,476
1960	841,800	2Q	133,805	2Q	230,376	2Q	387,052
1961	917,000	3Q	128,673	3Q	231,256	3Q	488,026
1962	930,900	4Q	120,489	4Q	242,072	4Q	531,686
1963	1,015,400	1957 1Q	124,368	1963 1Q	237,770	1969 1Q	542,720
1964	1,103,500	2Q	132,898	2Q	251,417	2Q	546,735
1965	1,241,000	3Q	143,988	3Q	262,988	3Q	606,816
1966	1,575,400	4Q	151,770	4Q	263,177	4Q	603,918
1967	1,835,700	1958 1Q	135,488	1964 1Q	259,407	1970 1Q	690,939
1968	1,759,200	2Q	156,821	2Q	266,322	2Q	798,694
1969	2,300,200	3Q	164,692	3Q	283,548	3Q	864,035
1970	3,225,500	4Q	170,501	4Q	294,195	4Q	871,838
1971	4,185,700	1959 1Q	166,379	1965 1Q	289,290	1971 1Q	909,841
1972	4,112,400	2Q	174,086	2Q	297,769	2Q	1,001,811
		3Q	181,961	3Q	315,454	3Q	1,104,735
		4Q	193,464	4Q	338,495	4Q	1,169,313

TABLE 8--Continued

Year	No. of Checks (Code NCPFE208)	Year/ Quarter	No. of Checks (Code REALQTRNCPFC208C)	Year/ Quarter	No. of Checks (Code REALQTRNCPFC208C)	Year/ Quarter	No. of Checks (Code REALQTRNCPFC208C)
		1960 1Q 2Q 3Q 4Q	192,752 204,755 225,378 218,902	1966 1Q 2Q 3Q 4Q	339,017 389,442 421,149 425,783	1972 1Q 2Q 3Q 4Q	1,115,019 510,631 1,022,331 1,064,482

SOURCES: Data for 1955-1965 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), p. 239.

Data for 1966-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 263.

NOTE: Data regarding the annual number of checks presented for clearance have been rounded to the nearest 100 checks.

businesses in South Vietnam. However, their size changed radically. In 1955, 73.8 percent of all businesses paid a license fee of 500 VN\$ or less, and by 1972 this percentage had declined to only 19.0 percent of all licensed businesses. . . Businesses paying a license fee of 500-24,999 VN\$ increased from 14.0 percent in 1955 to 66.6 percent in 1972. Public works contractors, who comprised only 1.1 percent of all licensed businesses in 1960, were 14.1 percent of all such businesses by 1972 and had reached a peak of 23.3 percent in 1969.⁷¹ The number of business establishments within the various sectors changed. For example, the number of manufacturing firms increased from 11,840 in 1960 to 21,026 in 1968. The number of firms engaged in wholesale and retail trade decreased radically from 86,700 in 1960 to only 40,476 in 1968.⁷²

Trade Balance

South Vietnam experienced a growing negative trade balance over the years of this study. The trade balance decreased from -291.8 million U.S. dollars in 1955 to -145.8 million U.S. dollars in 1960. During the period 1961 through 1964, the annual average negative trade balance was -230.4 million U.S. dollars. The negative trade balance continued to grow during the period 1965 through 1972 and was -719.1

⁷¹See Table 9.

⁷²Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 290, and Table 10.

TABLE 9
BUSINESS PATENTE LICENSES BY TYPE IN SOUTH VIETNAM
(000)

Year	Less Than 500 VN\$	% of Total (Code PBPLL209)	500- 24,999 VN\$	% of Total (Code PBPLM210)	Over 25,000 VN\$	% of Total	Public Works Contractors Schedule	% of Total (Code PBPLP211)	Total
1955	87.7	73.8	16.6	14.0	14.5	12.2	-	-	118.8
1956	101.5	79.5	26.0	20.4	.2	.1	-	-	127.7
1957	101.7	85.2	17.5	14.7	.2	.1	-	-	119.4
1958	128.2	84.5	23.4	15.4	.2	.1	-	-	151.8
1959	139.0	84.0	26.2	15.9	.3	.1	-	-	165.5
1960	149.1	82.8	28.8	16.0	.3	.1	1.9	1.1	180.1
1961	149.7	83.0	29.3	16.3	.3	.1	.9	.6	180.2
1962	136.4	83.1	27.4	16.8	.3	.1	-	-	164.1
1963	154.7	84.3	27.4	14.9	.3	.1	1.1	.7	183.5
1964	144.4	82.8	29.1	16.7	.7	.3	.3	.2	174.5
1965	133.9	81.6	30.1	18.3	.3	.1	-	-	164.3
1966	128.2	76.7	38.5	23.0	.6	.3	-	-	167.3
1967	110.2	66.3	30.1	18.1	.2	.1	25.7	15.5	166.2
1968	84.1	55.9	41.9	27.9	.3	.1	24.1	16.1	150.4
1969	69.4	42.9	54.6	33.7	.3	.1	37.6	23.3	161.9
1970	69.4	35.3	88.9	45.1	.9	.5	37.8	19.1	197.0
1971 ^a	50.4	25.9	106.8	54.8	4.0	2.0	33.6	17.3	194.9
1972	36.6	19.0	128.4	66.6	.6	.3	27.2	14.1	192.8

TABLE 9--Continued

SOURCES: Data for 1955-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), p. 555.

Data for 1967-1971 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 184.

NOTE: The patente was a hold-over from the French administrative and fiscal system. It was analogous to, but not the same as, a business license, and was imposed upon all businesses in South Vietnam. For the majority of businesses, the "patente" consists of four elements: the fixed tax, the proportional tax, additional percentages, and the Chamber of Commerce contribution. The fixed tax was based on normal indicators of profitability and had a maximum and minimum scale set forth in the tax code. The proportional tax element was based on the actual or imputed rent paid and was set at a maximum of 10 percent of the fixed tax. The additional percentages were based on the fixed tax and was 200 percent in large towns and 150 percent elsewhere. The fourth element, the Chamber of Commerce contribution, was 3.5 percent of the fixed tax. The patente for public works contractors (Schedule "C") was assessed on a separate basis. There was a fixed annual fee of VN\$ 500 plus 0.7 percent of the value of all contracts for a tax year. Importers were subject to special taxation under the patente. The fixed tax portion for imports was VN\$ 12,140 annually and a variable fixed tax was calculated at the rate of VN\$ 1.214 for every United States dollar allocated to them for import purposes. See Republic of Vietnam, Doing Business in Viet Nam, Legal and Commercial Considerations (Washington, D.C.: Embassy of Vietnam, 1970), pp. 85-86.

^aData are estimated from previous performance.

TABLE 10
NUMBER OF COMMERCIAL ESTABLISHMENTS
IN SOUTH VIETNAM

Year	Wholesale and Retail Trade	Banks, Financial Institutions, Insurance and Real Estate	Transportation, Storage and Communications	Services	Total (Code NCOME212)
1955	13,971	46	227	877	15,121
1956	28,516	119	594	2,294	31,523
1957	43,062	192	961	3,711	47,926
1958	57,607	264	1,328	5,127	64,326
1959	72,153	336	1,694	6,544	80,727
1960	86,700	410	2,060	7,960	97,130
1961	80,922	418	2,557	8,791	92,688
1962	75,144	427	3,054	9,622	88,247
1963	69,366	435	3,552	10,452	83,805
1964	63,589	444	4,049	11,283	79,365
1965	57,810	452	4,547	12,114	74,923
1966	52,032	461	5,044	12,945	70,482
1967	46,254	470	5,542	13,775	66,041
1968	40,476	479	6,038	14,606	61,599
1969	43,571	516	6,500	15,723	66,310
1970	53,017	628	7,909	19,132	80,686
1971	52,452	621	7,825	18,928	79,826
1972	51,887	614	7,741	18,724	78,966

SOURCES: Data for 1955 are adapted from United Nations, Report of the Economic Survey Mission to the Republic of Vietnam, Toward The Economic Development of the Republic of Viet-Nam (New York: United Nations, 1959), pp. 226-227.

Data for 1960 and 1968 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 290.

NOTES: Data for the time period 1956-1959 and 1961-1967 are estimated from data reported for 1955, 1960 and 1968.

Data for the time period 1969-1972 are estimated from data concerning total business patente licenses.

million U.S. dollars by the close of 1972. The trade deficit was largely financed through economic aid from the United States.⁷³

Urbanization

Some of the more intangible effects of political violence on the economy of South Vietnam are reflected in the percentage of the population living in cities of 20,000 or more which declined from 21.9 percent in 1955 to 15.6 percent at the end of 1960. There was a slight increase in city population during the time period 1961 through 1964, and by the close of 1964 only 17.1 percent of the population lived in cities of 20,000 or more. However, this trend toward urbanization continued and by the close of 1972, 29.2 percent of the population lived in cities of 20,000 or more.⁷⁴ As a separate statistic, the number of temporary refugees and those living permanently in centers averaged each year 800,000 over the time period 1964 through 1968. By the end of 1971, the number of refugees had declined to only 123,000 but increased again in 1972, and at the close of 1972 there were 675,333 refugees.⁷⁵

The impact of the war on each sector of the economy of South Vietnam was not equal or uniform over the eighteen years of this study. In general terms, the data seems to

⁷³See Appendix B, Table 40.

⁷⁴See Table 11.

⁷⁵Republic of Vietnam, Vietnam Statistical Yearbook, 1972, pp. 378, 379.

TABLE 11
POPULATION LIVING IN CITIES OF 20,000 OR MORE IN SOUTH VIETNAM
(000)

Year	Total Population of the Republic of Vietnam	Total Population Living in Cities of 20,000 or More	Percentage of Population Living in Cities of 20,000 or More
1955	12,068	2,643	21.9
1956	12,366	2,651	21.4
1957	13,052	2,555	19.6
1958	12,935	1,967	15.2
1959	13,789	2,145	15.6
1960	14,072	2,191	15.6
1961	14,494	a	a
1962	14,275	2,458	17.2
1963	14,133	2,360	16.7
1964	14,359	2,449	17.1
1965	15,024	2,710	18.0
1966	15,112	2,746	18.2
1967	16,256	3,293	20.3
1968	16,259	3,987	24.5
1969	16,543	a	a
1970	17,333	4,573	26.4
1971	18,708	5,464	29.2
1972	19,213	5,615	29.2

TABLE 11--Continued

SOURCES: Data on Total Population of the Republic of Vietnam adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 357.

Data for 1955-1956 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1954-1955 (Saigon: National Institute of Statistics, 1957), pp. 35, 36, 39, 40.

Data for 1957 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1958), pp. 17, 19.

Data for 1958 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1957 (Saigon: National Institute of Statistics, 1959), pp. 17, 19.

Data for 1959 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1958-1959 (Saigon: National Institute of Statistics, 1960), pp. 43, 45, 46.

Data for 1960 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1960-1961 (Saigon: National Institute of Statistics, 1962), p. 45.

Data for 1962 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1963 (Saigon: National Institute of Statistics, 1965), pp. 25, 26, 27.

Data for 1963-1964 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1964-1965 (Saigon: National Institute of Statistics, 1966), pp. 29, 30, 34, 36-41.

TABLE 11--Continued

Data for 1965-1967 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 387-389, 398-401.

Data for 1968 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1968), pp. 385, 386, 394, 396-399.

Data for 1969 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), pp. 359, 377.

Data for 1970 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1970 (Saigon: National Institute of Statistics, 1971), pp. 371-380, 382-389.

Data for 1971 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1971 (Saigon: National Institute of Statistics, 1972), pp. 353-367, 369-379.

Data for 1972 on Total Population Living in Cities of 20,000 or More adapted from population tables contained in Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 357-365.

^aData not available.

suggest that the war depressed the primary sector, developed the secondary sector, particularly the infrastructure and construction and greatly expanded the tertiary sector, particularly the commercial sub-sector and public administration and defense, and services.

Allied Economic Sector

An important impact of the war on the economy of South Vietnam was the presence of United States and Allied support and combat forces in South Vietnam beginning in 1963.⁷⁶ The increased number of these forces from 16.5 thousand in 1963 to 606.0 thousand in 1968 brought about a boom in the Vietnamese economy.⁷⁷ The "Allied Sector" consisted of the economic activities associated with the presence of Allied troops which included private and Allied government spending on the local economy, government grants, economic aid and loans.

The Vietnamese employed in the United States portion of this sector were largely employed in services and construction. Employment in the United States sub-sector began to build up coincidental with the introduction of United States combat forces into South Vietnam in 1965.⁷⁸ By the end of

⁷⁶U.S. Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam (Washington, D.C.: Government Printing Office, 1969), 91st Cong., 1st sess., p. 9.

⁷⁷See Appendix B, Table 38.

⁷⁸U.S. Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, p. 19.

1966, total Vietnamese nationals employed in this sector numbered 126.0 thousand persons. The Vietnamese employment level continued to grow until it reached a peak of 144.8 thousand at the end of 1969. After 1969, Vietnamese employment in the sector declined and stood at only 54.7 thousand at the end of 1972. Occupations of Vietnamese employed in this sector were concentrated in services with construction and related occupations forming the next largest number.⁷⁹

United States forces spending in the Allied sector increased from 42.0 million U.S. dollars in 1964 to 403.0 million U.S. dollars in 1971.⁸⁰ The injection of United States and Allied economic aid was accelerated during the period 1966 through 1972. United States economic aid in all forms decreased from 325.8 million U.S. dollars in 1955 to 180.5 million U.S. dollars in 1960. Annual United States aid during the period 1961 through 1964 averaged 173.2 million U.S. dollars. United States aid increased during the period 1965 through 1972 to an annual average of 534.4 million U.S. dollars. Annual United States aid reached a peak of 665.3 million U.S. dollars in 1967.⁸¹

This sector which was created by the war had a measurable input in the form of Allied forces private spending, Allied government spending and the injection of Allied economic aid, credits and loans. It was a conglomerate

⁷⁹See Appendix B, and Table 37.

⁸⁰See Appendix B, Table 39.

⁸¹See Appendix B, Table 41.

sector which supplied goods and services related to Allied troop presence. The goods and services were concentrated in personal services, real estate, utilities, and construction. The creation of this separate Allied sector is perhaps a unique facet of the war in South Vietnam. This sector was created by both the presence of large numbers of Allied troops and the injection of large quantities of foreign economic aid into South Vietnam in a short period of time.⁸²

It is emphasized that Allied spending in all forms, Allied aid, grants, loans and dollar conversions are all accounted for in the national South Vietnam GNP, GDP, employment and other statistics. It would be difficult, if not impossible, to disaggregate these data from present information which has been consulted. However, the reader is provided a comprehensive review of the dimensions of the Allied section in the economy of South Vietnam in Appendix B.

An Overview of Political Violence and Economic Development

The impact of political violence on the economy of South Vietnam has not been assessed in any systematic way. The connection between the frequency and magnitude of political violence events and the development of the economy of South Vietnam was suggested by one writer⁸³ in a normative or

⁸²See Appendix B, Table 42.

⁸³Edward Albert Smyth, "The Effect of the War on the South Vietnamese Economy, 1975-1967," Unpublished Master's Thesis, United States Naval Post-graduate School, 1970.

general sense. However, these suggestions have not been organized in a systematic manner which would relate the frequency and magnitude of political violence to the development of the economy of South Vietnam, which is the task of this study.

The relationship between the national development of the economy of a country and the political instability⁸⁴ of that country has been investigated by many writers. Most authors have assumed that political stability is a pre-condition for economic development. Others have simply assumed, without the benefit of empirical investigation, that economic development leads to political stability. Authors who have supported political stability as a condition for economic development are Irma Adelman and Cynthia T. Morris,⁸⁵ Peter T. Bauer and Basil S. Yamey,⁸⁶ Simon Kuznets,⁸⁷

⁸⁴Political instability is defined by Ivo K. and Rosalind L. Feierabend as ". . . the degree or the amount of aggression directed by individuals or groups with the political system against other groups or against the complex of officeholders and individuals and groups associated with them." See Ivo K. and Rosalind L. Feierabend, "Aggressive Behaviors Within Politics, 1948-1962: A Cross-National Study," The Journal of Conflict Resolution, Vol. X, No. 3 (September, 1966), p. 250.

⁸⁵Irma Adelman and Cynthia T. Morris, "A Factor Analysis of the Interrelationship between Social and Political Variables and Per Capita Gross National Product," Quarterly Journal of Economics, Vol. 79, No. 4 (November, 1965), pp. 568, 569.

⁸⁶Peter T. Bauer and Basil S. Yamey, The Economics of Under-Developed Countries (Chicago: University of Chicago Press, 1956), p. 163.

⁸⁷Simon Kuznets, Modern Economic Growth: Rate, Structure and Spread (New Haven, Connecticut: Yale University Press, 1966), p. 451.

Lucian Pye,⁸⁸ and Charles Wolf, Jr.⁸⁹ A few writers have suggested that the process of development in general, and in some cases economic development, leads to political instability. Principal among these writers are Bert F. Hoselitz and Myron Weiner,⁹⁰ Mancur Olson, Jr.⁹¹ and Harold and Margaret Sprout.⁹² A few writers have suggested that high system legitimacy or the lack of opportunity could reduce or increase political stability regardless of the level of economic development. This view is held by both Samuel P. Huntington,⁹³ and Seymour Martin Lipset.⁹⁴

Most of the studies which investigate the relationship between any elements of political instability and economic

⁸⁸Lucian Pye, Aspects of Political Development (Boston: Little, Brown and Company, 1966), p. 15.

⁸⁹Charles Wolf, Jr., United States and the Third World (Boston: Little Brown and Co., 1967), pp. 42-43.

⁹⁰Bert F. Hoselitz and Myron Weiner, "Economic Development and Political Stability in India," Dissent, Vol. 8 (Spring, 1961), p. 172.

⁹¹Mancur Olson, Jr., "Rapid Growth as a Destabilizing Force," Journal of Economic History, Vol. XXIII, No. 4 (December, 1963), pp. 529-552.

⁹²Harold and Margaret Sprout, "The Dilemma of Rising Demands and Insufficient Resources," World Politics, Vol. II, No. 4 (July 1968), p. 661.

⁹³Samuel P. Huntington, Political Order in Changing Societies (New Haven, Connecticut: Yale University Press, 1968). [This title suggests that the opportunities for legal participation reduce the likelihood of political instability.]

⁹⁴Seymour Martin Lipset, Political Man (Garden City, New York: Anchor Books, 1963), Chapter 3 for a discussion of legitimacy and stability.

development do so on a cross-polity basis.⁹⁵ In addition, these studies are frequently restricted to one or two points in time and do not extend over long periods of development.⁹⁶ A cross-polity analysis by its very nature must generalize and look for commonality, trends, and changes in political instability among the polities of the study. In such studies, it is difficult to focus on the long term impact of political instability in any one particular polity. Likewise, an investigation of economic development which is restricted to one or two points in a developing period, even if spaced at reasonable intervals, may lead to misconceptions of the trends and results of economic development. Most cross-polity studies of political instability and economic development use a small number of indicators of both

⁹⁵ Perhaps the best known study which links social and political variables with economic development is found in Irma Adelman and Cynthia Taft Morris, "A Factor Analysis of the Interrelationship between Social and Political Variables and Per Capita Gross National Product," Quarterly Journal of Economics, Vol. LXXIX, No. 4 (November, 1965), pp. 555-578. This study covers seventy-four less-developed countries during the period 1957 through 1962.

⁹⁶ An example of this type of study is Leila Hucko Fraser, "A Cross-National Analysis of Political Instability and Economic Development," Unpublished Ph.D. dissertation, University of Illinois, 1971, which was a study of seventy-four countries during the time period 1960 through 1965 which compared four indicators of political instability with several indicators of economic development and growth, such as per capita GNP, ratio of agricultural workers/labor force, and GNP growth rates.

political instability and economic development.⁹⁷ This restriction is primarily made because of the large numbers of polities in cross-polity studies which magnify the work load when the number of political instability and economic development variables is increased. The studies are gross in nature and do not attempt to assess the specific effects of political instability on economic development.

An Overview of Political Violence and Marketing Development

This study measured the impact of political violence on marketing development in South Vietnam over an eighteen year period from 1955 through 1972. Selected marketing and related variables were used to reflect the changes in marketing development of South Vietnam. This is a single polity study. Changes in the frequency and magnitude of political violence events variables were compared with changes in marketing variables to assess the impact of political violence on the development of marketing in South Vietnam. The

⁹⁷An example of this type of study is Delbert Joseph Ringquist, "Cross-National Patterns of Development and Political Violence in Countries Formerly Under French Rule," Unpublished Ph.D. dissertation, the University of Oklahoma, 1971, which was a study of the twenty-four former French colonies. The study compared four broad categories of political violence (turmoil events, revolt events, guerrilla warfare events, and civil war events) with six broad categories of social and economic development (urbanization, communications, recruitment, education, economics and social). The economic indicators were limited to per capita GNP imports (in U.S. \$) per 1,000 population, and per capita energy consumption.

selection of political violence events variables and marketing variables is discussed in Chapter III.

South Vietnam was selected for this study because it experienced a broad spectrum of political violence from 1955 through 1972. Between these two points in time the magnitude and frequency of destabilizing political events changed in South Vietnam.⁹⁸ In addition, there were changes in economic and social conditions which are indicators of marketing development.⁹⁹

For purposes of analysis and comparison, this study identifies three political violence time periods during the period of the study. There was a "pre-insurgency" period from 1955 through 1960 which was characterized by a low level of political violence, moderate economic growth and social development. The second period was known as the "insurgency" period. This period was characterized by an increase in both the frequency and magnitude of destabilizing events of political violence. Economic and social progress during this period was erratic. There was a "limited war" period which began in 1965 and continued through the end of the study in 1972. This period was punctuated with unprecedented increase in the frequency and magnitude of political violence over most of the period. The economy labored under great strain during this period and its performance was very weak and

⁹⁸See Appendix C and Tables 43 and 44.

⁹⁹An overview of these events has been presented earlier in this Chapter.

unstable. It is, perhaps, more than coincidental that the major time periods which were identified by political violence events and economic and social indicators of marketing development in South Vietnam are the same.

Marketing operations of firms in the developed countries of the world enjoy a relatively stable political environment. This is not true of marketing operations in many of the developing countries of the world and certainly not of South Vietnam over the period of this study. Aside from all the difficulties which face any new developing country, the people of South Vietnam attempted to develop their country's marketing system while confronted with political violence. This violence was reflected through protest demonstrations, government sanctions, riots, armed attacks, and deaths from political violence.¹⁰⁰ These violent political events increased the level of uncertainty about marketing operations. The expected or normal marketing development process appears to have been impeded by, among other things, the systematic disruption of all aspects of transport, communications, and commercial operations. The increase in the frequency and magnitude of destabilizing political violence had a decided toll on the development of the economy of South Vietnam in general and the marketing system in particular.

There has been limited inquiry into the area of marketing and political instability. Most of the study effort has focused on the legal aspects of property and investment made

¹⁰⁰See Appendix C, and Tables 43 and 44.

by United States firms overseas.¹⁰¹ In general, these studies have been normative and descriptive and have not employed political variables in the analysis.¹⁰² A few studies of international marketing operations have used one or more political variables in the analysis,¹⁰³ but no overall comprehensive study of the relationship between marketing development and political violence has been made. Scholars of marketing development and practicing international business executives infrequently make reference to political violence except as it relates to foreign marketing investment decisions.¹⁰⁴ The studies of marketing development focus on many countries or, at best, a region. These studies tend to evaluate marketing development based on only one or two points in time rather than over a broad spectrum of years.¹⁰⁵

Most importantly, there are no known studies of political violence and marketing development in South Vietnam.

¹⁰¹See the two studies by Yair Aharoni, The Foreign Investment Decision Process (Boston: Harvard University Graduate School of Business, 1966) and R.S. Basi, Determinants of United States Private Direct Investment in Foreign Countries (Kent, Ohio: Kent State University, 1963).

¹⁰²Karen Krause Bivens and Helen S. Lambeth, A World-Wide Look at Government-Business Relations (New York: National Industrial Conference Board, 1967).

¹⁰³A. A. Liander, et al., Comparative Analysis for International Marketing (Boston: Allyn and Bacon, 1967), p.136.

¹⁰⁴Franklin R. Root, "Attitudes of American Executives Toward Foreign Governments and Investment Opportunities," Economic and Business Bulletin, Vol. 20 (January, 1968), p. 22.

¹⁰⁵For examples of these types of studies, see Reed Moyer and Stanley C. Hollander, eds., Markets and Marketing in Developing Economies, (Homewood, Illinois: Richard D. Irwin, 1968).

This researcher was unable to locate any studies which attempt to evaluate marketing development under conditions of political violence. Some studies have been conducted which evaluate the importance of political instability and foreign marketing investment.¹⁰⁶ One study attempted to determine the relationship between political instability and marketing opportunities.¹⁰⁷

Statement of the Research Problem

Marketing development studies have focused on the role of marketing in the development process.¹⁰⁸ These studies have dealt almost exclusively with the theory of dualism in which the two sectors of a developing economy are separated

¹⁰⁶ Robert T. Green, "An Empirical Study of Relationship between Political Instability and the Allocation and Flow of U.S. Foreign Private Direct Marketing Investment," Unpublished Ph.D. dissertation, The Pennsylvania State University, 1971.

¹⁰⁷ A. A. Liander, et al., Comparative Analysis for International Marketing, p. 136.

¹⁰⁸ A major study of the role which marketing plays in the economic development process is Reed Moyer, Marketing in Economic Development (East Lansing, Michigan: Michigan State University, 1965), International Business Occasional Paper No. 1. Also see Reed Moyer, "The Structure of Markets in Developing Economies," Business Topics, Vol. 12, No. 4 (Autumn, 1964), pp. 43-60. Other writers on the role which marketing plays in economic development are: Leon V. Hirsch, "The Contribution of Marketing to Economic Development--A Generally Neglected Area," in Proceedings of the Winter Conference of the American Marketing Association, December 27-29, 1961, ed. William D. Stevens (Chicago: American Marketing Association, 1962), pp. 413-418. An early landmark article on the role of marketing in the development process is Peter F. Drucker, "Marketing and Economic Development," Journal of Marketing, Vol. 22 (January, 1958), pp. 252-259.

radically between a market oriented production sector and a traditional oriented agriculture sector.¹⁰⁹ Most of the studies have concentrated on marketing activities which are essential to transformation of the traditional sector into a market sector. These activities cover a broad spectrum of social, cultural, and economic functions and include political considerations only if marketing investment decisions are involved.¹¹⁰ One marketing development study measures the rate of growth in the propensity of households to participate in marketing transactions.¹¹¹ Another study uses systems theory to measure changes in the role of marketing in a developing country.¹¹² Many marketing development studies are historical analyses of the development of marketing

¹⁰⁹A major study of dualism and marketing development is by P. T. Bauer and B. S. Yamey, "The Economics of Marketing Reform," The Journal of Political Economy, Vol. LXII, No. 3 (June, 1954), pp. 210-235. Also, see N. R. Collins and R. H. Holton, "Programming Changes in Marketing in Planned Economic Development," Kyklos, Vol. V (1963), pp. 123-136.

¹¹⁰Edward Littlejohn, "Direct Investment and the Developing Countries," Atlantic Community Quarterly, Vol. 5 (Winter, 1967-1968), p. 549.

¹¹¹Douglas Felix Lamont, "A Theory of Marketing Development: Mexico," Unpublished Ph.D. dissertation, University of Alabama, 1964.

¹¹²John E. Griggs, "Evaluating the Consequences of Marketing Change: An Application of Systems Theory," Unpublished Ph.D. dissertation, Michigan State University, 1968.

systems in a less-developed region or country.¹¹³ Some focus on the marketing process associated with one or more commodities in a less-developed country.¹¹⁴ Much of the literature in marketing development focuses on the socio-cultural and institutional aspects of a particular country or region as they relate to marketing development.¹¹⁵

The political environment in which marketing develops has been largely ignored. Contemporary political violence is prevalent throughout the world today and particularly in the less-developed countries. There is little evidence that world-wide political violence is declining or that the impact of political violence will become less severe on the economic progress of nations. Regardless of the growth or decline of political violence, the politics of international relations

¹¹³ A classic study of this type is by L. V. Hirsch, Marketing in an Under-developed Economy: The North Indian Sugar Industry (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961). Also, see Jag Mohan Singh, "The Significance of Marketing in an Under-developed Country--India," Unpublished D.B.A. dissertation, The George Washington University, 1966.

¹¹⁴ A key study of this type which focuses on food marketing is J. K. Gailbraith and R. H. Holton, Marketing Efficiency in Puerto Rico (Cambridge, Massachusetts: Harvard University Press, 1955).

¹¹⁵ An example of this type of study is found in David Carson, "Marketing in Tropical Africa," Proceedings of the Winter Conference of the American Marketing Association, pp. 434-443. Also, see Reed Moyer and Stanley C. Hollander, eds., Markets and Marketing in Developing Economies (Homewood, Illinois: Richard D. Irwin, Inc., 1968), which emphasizes the influence of the environment on marketing and the influence of marketing on the environment.

and economics are inextricably intertwined.¹¹⁶ Marketing development is the most important element relative to the development of less-developed countries.¹¹⁷

The position taken in this study is that political violence has altered the normal patterns of marketing development in South Vietnam. This resulted in delays or stagnation of the growth of some sectors of the economy while it accelerated the growth of other sectors.¹¹⁸ It is speculated that changes in the economic sector growth patterns in South Vietnam did not follow those specified in the literature.¹¹⁹

¹¹⁶ Joseph Cornwall Palamountain, Jr., The Politics of Distribution (Cambridge, Massachusetts: Harvard University Press, 1955), pp. 1-4.

¹¹⁷ Marketing development was viewed by one writer as the most important "multiplier" in the economic development process and therefore should receive priority attention when its development is impeded or changed. See Peter F. Drucker, "Marketing and Economic Development," Journal of Marketing, p. 253.

¹¹⁸ Some studies have indicated, without the benefit of empirical evidence, that some economic sectors of the economy were damaged by the war while other economic sectors benefited from the war. See U.S. Library of Congress, Impact of the Vietnam War, United States Senate, Committee on Foreign Relations, 92nd Cong., 1st sess., 1971, p. 32.

¹¹⁹ This is the main theme put forth by Colin Clark and A. G. B. Fisher that tertiary production is of much less importance in the less-developed countries than in developed market economies, and that economic development is characterized by a movement of the labor force from primary production (economic sector) to secondary economic sector and then to the tertiary economic sector. See Colin Clark, The Conditions of Economic Growth, 2nd ed. (London: MacMillan and Company, Ltd., 1951), pp. 395, 396, and A. G. B. Fisher, Economic Progress and Social Security (London: MacMillan and Company, Ltd., 1945), pp. 5, 6. Also, there is the idea that marketing and related activities in the modern sector of the economy developed on a parallel basis with the primary or traditional sector. For a review of this concept, see David Carson, International Marketing--A Comparative Systems Approach (New York: John Wiley and Sons, Inc., 1967), Chapter 8, pp. 158-309.

The major research question to be answered by this study is:

What was the impact of political violence on national marketing development in South Vietnam from 1955 through 1972?

This question implies that a negative relationship existed between political violence and national marketing development in South Vietnam from 1955 through 1972. Stated positively, the higher the level of political violence the less the national marketing system developed. The research task is to measure national marketing development and the impact which political violence had on this development. The measurement will be made in the three political violence periods of "pre-insurgency" 1955 through 1960, "insurgency" 1961 through 1964, and "limited war" 1965 through 1972, considered in this study.

The economic and political literature on South Vietnam suggests that the impact of political violence fell hard on the infrastructure of transportation and communications which supported marketing operations.¹²⁰ The impact of political violence caused major changes in the marketing institutions

¹²⁰The Joint Development Group report estimated the damage of the infrastructure due to enemy activities was 580 million VN\$. For a complete discussion of war damage to the infrastructure, see Joint Development Group, The Postwar Development of the Republic of Vietnam (New York: Praeger Publishers, 1970), pp. 344-395.

in South Vietnam.¹²¹ Therefore, a minor but closely related research question is:

What was the impact of political violence on the development of an infrastructure to support marketing operations and marketing middlemen in South Vietnam from 1955 through 1972?

The literature suggested that the impact of political violence on the infrastructure supporting marketing operations and the middlemen actually engaged in marketing operations was both greater and more discernible than it was on over-all national marketing development. This would imply the existence of a stronger negative relationship between political violence and the growth of marketing related infrastructure and marketing operations in South Vietnam. This question speculates that the higher the levels of political violence, the less the growth and development of the infrastructure and middlemen comprising marketing operations.

Scholars who have studied changing political and economic conditions in South Vietnam from 1955 through 1972 seem to agree that political violence was responsible for the complete economic stagnation and redirection of marketing activities in the agricultural sector of the economy.¹²² They point particularly to the production and marketing of

¹²¹Research Team, Simulmatics Corporation, Cambridge, Massachusetts, A Study of Commercial Distribution of Agricultural Inputs in the Mekong Delta of Vietnam (Saigon: Joint Economic Office, United States Mission to Vietnam, U.S. Department of State, 1968), p. 48, and Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam (Cambridge, Massachusetts: The Massachusetts Institute of Technology Press, 1970), pp. 1-4.

¹²²Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam, pp. 75-160.

rice.¹²³ This same condition is judged to have pertained to the plantation based production of rubber, and to a lesser degree, to coffee and tea.¹²⁴ The rationale is that marketing opportunities for these major agricultural commodities declined due to the increased level of political violence. Therefore, a separate minor research question is:

What was the impact of political violence on the production of key agricultural commodities in South Vietnam from 1955 through 1972?

This question suggests that the higher the level of political violence, the less the output of key agricultural commodities.

The economy of South Vietnam has been described as consisting of a rural subsistence sector and a developing market sector. It is further stated that the production in the market sector was largely focused on items for domestic consumption.¹²⁵ The literature on South Vietnam recognizes the large volume of consumables imported from abroad.¹²⁶ Writers on South Vietnam also discuss changes in the over-all availability of goods and in domestic consumption patterns in South Vietnam over the period of this study. Specifically, they contend that there were radical shifts in the volume and

¹²³See Table 3.

¹²⁴Ibid.

¹²⁵Joint Development Group, The Postwar Development of the Republic of Vietnam, pp. 255-264.

¹²⁶Maxwell Harway, Donald A. French, and Thomas F. Miller, A Study of Some Aspects of the Import Market Structure in South Vietnam (Washington, D.C.: United States Agency for International Development, 1971).

composition of many consumables in response to the presence of political violence in South Vietnam.¹²⁷ Marketing's logical role in this task would have been to redirect domestic production and imports to meet changes in domestic consumption patterns. Therefore, the final minor research question is:

What was the impact of political violence on the patterns of consumption in South Vietnam from 1955 through 1972?

The composition of domestic manufactures, imports, and exports, along with their volume, was evaluated in answering this question. The key task in answering this question was to measure the impact of political violence on national consumption patterns which changed rapidly and radically from 1955 through 1972.

Purpose of the Study

The major purpose of this study is to measure the impact of political violence on the national marketing system of South Vietnam from 1955 through 1972. This evaluation spans an eighteen year time period. This was accomplished by measuring the specific effects of political violence on the development of a national marketing system under changing

¹²⁷ Douglas C. Dacy, "Availability of Goods in South Vietnam from 1964 through 1967," Study S-336, Institute for Defense Analyses, 1969, and Marjorie Zechtel McElroy, "Household Expenditure Patterns in Rural South Vietnam," Unpublished Ph.D. dissertation, Northwestern University, 1969.

levels of instability reflected in the three periods of "pre-insurgency" 1955 through 1960, "insurgency" 1961 through 1964, and a "limited war" 1965 through 1972.

A secondary purpose of this study was to measure the impact of political violence on the development and functioning of an infrastructure of transportation, communications, finance, marketing middlemen, and utilities. This purpose was more specific than the major purpose of measuring the impact of political violence on the over-all development of a national marketing system. The secondary purpose was aimed at an inspection of the specific effects of political violence on the development and functioning of systems which supported the national marketing system and all commercial activities in South Vietnam.

The third purpose of the study was to measure the impact of political violence on the physical production and marketing of key agricultural commodities. This third purpose focused on the production and marketing of agricultural commodities which were distributed through the national marketing system.

The fourth purpose of the study was to measure changes in the consumption patterns of the South Vietnamese people. The objective was to measure significant changes in the way in which people spend their income reflected through changes in consumption.

Coincidental to achieving the above purposes, an additional clear and beneficial purpose was to illustrate how the

impact of political violence on the marketing and economic development of other less-developed countries could be evaluated. Therefore, a case illustration of the application and use of the methodology was also a purpose of this study.

Contributions of the Study

This is the first study of marketing which deals specifically with the impact of political violence on the development of a national marketing system in a less-developed country. The study was expected to make several contributions. First, the study provides new and important information, regarding political violence, national marketing, and related economic development. Second, this study indicated the frequency and magnitude of political violence which can be expected to impact upon a country's marketing and related economic development. Third, the information in this study should be a useful guide to investors and entrepreneurs in the less-developed countries which are experiencing political violence.

A fourth contribution of the study was an illustration that the traditional patterns of economic sector development do not apply when there are changing levels of political violence in a country. The study has shown that parallel development of the primary or traditional sector and the modern or market sector does not take place simultaneously when there are changing levels of political violence. Most importantly, the study has shown that the over-all development of marketing and other elements of the economy are

different under conditions of political violence from those which are experienced under stable political conditions.

A significant contribution was the illustration of how the methodology of this study can be used to measure the development of marketing and related activities under conditions of political violence in the less-developed countries. The over-all methodology of the study should be particularly useful to economic planners and policy makers in the formulation of policies and plans for marketing development in other less-developed countries experiencing political violence.

Scope of the Study

Not all aspects of marketing development were considered in this study. Only the performance of business or government activities that direct the flow of goods and services from domestic or foreign producers to consumers or users were considered. The emphasis in the study was on the national distribution system. However, this did not preclude consideration of marketing activities of some middlemen that may include advertising, promotion and product development. The study included an evaluation of the infrastructure systems of transportation, communications, finance and utilities which support marketing operations. The study evaluated the production and marketing of key agricultural commodities. Changes in consumption patterns which reflect marketing development were evaluated in the study.

This study was an economic sector analysis which focused on the tertiary sector and related the marketing

activities of that sector with the supporting marketing functions found in the primary, secondary and tertiary sector. The major thrust of the study was to evaluate how South Vietnam developed its national marketing and marketing related systems during three time periods in which the frequency and magnitude of political violence changed.

The study did not consider all aspects of political instability. The focus of the study was on political violence. Political participation and political freedom were not considered in this study. Only measurable indicators of political violence were used in order to assess their impact on the development of a national market and its supporting and related systems in South Vietnam. The political structure in South Vietnam and its performance over periods of time could not be a part of this limited research. A study of the broad concept of political development¹²⁸ in South Vietnam was not within the scope of this study.

Other areas clearly outside the scope of this study were questions relative to the vital interest of the United States in South Vietnam and the moral issues of whether or not the involvement of the United States and its Allies in South Vietnam was "right" or "wrong." Also, the merits of the political policies of the government of South Vietnam toward

¹²⁸The broad concept of political development is akin to the process of modernization, social mobility, national integration and related concepts. The concept is explained in detail in Lucian Pye, Aspects of Political Development (Boston: Little, Brown and Co., 1966).

the National Front for Liberation of South Vietnam (NFLSV)¹²⁹ and The Democratic Republic of North Vietnam¹³⁰ were not considered in this limited study.

The development under consideration took place in the midst of significant political, social, cultural and economic confusion. A clear limitation of this study was that it did not consider every facet of that situation. Therefore, the major effort of this study was to explain the impact of political violence on the development of marketing and related marketing operations in South Vietnam.

Order of Presentation

Chapter II is a review of the literature relative to the concepts of political instability and marketing and economic development. The concept of developing a national marketing system and the definition of marketing for the purpose of this study is specified. Previous measures of marketing development, their use and limitations, are discussed. New techniques for improving upon conventional marketing development analysis is discussed.

¹²⁹The National Front for the Liberation of South Vietnam (NFLSV) was founded in December, 1960, as the political organization behind the insurgent military force known as the Viet Cong. See U.S. Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, 5th rev. ed. (Washington, D.C.: Government Printing Office, 1969), 91st Cong., 1st sess., p. 7.

¹³⁰The Democratic Republic of Vietnam was established on July 20 and 21, 1954, following the Geneva Conference on Indochina. U.S. Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, pp. 139-153.

Chapter III presents the general method of analysis to be employed to measure the impact of political violence on marketing development. The three time periods of "pre-insurgency," "insurgency," and "limited war" are rationalized and explained. The measurement of political violence and the selection of political violence variables are presented. Measures of marketing development and operation, key agricultural commodity production and consumption pattern changes are presented. The justification for the data used in the analysis and its credibility are pointed out. The detailed methodology for analyzing the political instability and marketing development variables is specified.

In Chapter IV the results of the analysis performed on the variables selected in Chapter III are discussed. This chapter addresses the results of the analysis and show the impact of political violence upon the development of a national marketing system in a less-developed country. The results of the analysis in this chapter are compared with conventional findings of marketing development to determine similarities and deviations.

Chapter V presents the conclusions of the study. Recommendations for other work in the area of political violence and marketing development are made.

CHAPTER II

MARKETING DEVELOPMENT AND POLITICAL VIOLENCE

Political Instability and Economic Development

Most authors have supported political stability as a condition for economic development, while a few have suggested that the economic development process itself leads to political instability. Some writers have assumed that system legitimacy or the lack of opportunity could reduce or increase political stability regardless of the level of economic development.

Demands-Capabilities Linkage

Social mobilization has been used as a major concept for linking economic development and political instability. It is reasoned that as the result of economic development, the lifestyles of people change and that this change causes "social tension." Traditional ways of doing things are changed through the expansion of economic opportunities from the process of development. There is thought to be an imbalance in this change process, whereby some people progress relatively faster than others, causing unrest.¹

¹Neil J. Smelser, The Sociology of Economic Life Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965) p. 113.

Most writers believe that new groups which are formed through social mobilization make demands on the political system which cannot be met; therefore, the system becomes unstable. For example, Samuel P. Huntington stated that new groups "become increasingly aware of themselves as groups and of their interest and claims in relation to other groups."² Improvements in communications, education, and the process of urbanization have increased the awareness of people and changed the level of their aspirations. These new groups make demands on the system which have limited resources or capabilities in the short run. The failure of the system to meet the demands results in discontent which is reflected in various forms of political instability. Huntington notes that the "opportunities for social and economic mobility and adaptable political institutions"³ are not available.

Another key writer in this area, Karl Deutsch, found that increasing members of the mobilized population and their needs for political decisions and governmental services was translated into increased political participation.⁴ Deutsch noted that if their demands were not met political

²Samuel P. Huntington, Political Order in Changing Societies (New Haven: Connecticut: Yale University Press, 1968), p. 38.

³Ibid., p. 54.

⁴Karl W. Deutsch, "Social Mobilization and Political Development," American Political Science Review, Vol. LV, No. 3 (September, 1964) p. 499.

instability was likely to occur.⁵ The political and economic institutions were not developed to a sufficient degree to meet the demands of the mobilized population. It is further implied that these institutions cannot or will not be developed in time to avoid "social tensions" which will lead to political instability. Other authors who have used the demands-capabilities reasoning to link economic development and political instability are Arnold S. Feldman⁶ and Wilbert E. Moore.⁷

Frustration-Aggression Theory

There is a large and growing group of writers who have attempted to extend the demands-capabilities idea by connecting the process of economic development to political instability through the use of the psychological theory linking frustration and aggression. These writers reason that the members of a society are exposed to economic development as suggested by the demands-capabilities linkage. This leads to aspirations for material things and an over-all improvement in their lifestyle. Wants are not met in developing countries because of an inherent scarcity

⁵Ibid.

⁶Arnold S. Feldman, "Violence and Volatility: The Likelihood of Revolution," Internal War, ed. Harry Eckstein (New York: Free Press, 1964), p. 116.

⁷Wilbert E. Moore, "Industrialization and Social Change," Industrialization and Society, ed. Bert F. Hoselitz and Wilbert E. Moore (The Hague: Mouton, 1963), p. 349.

of goods. Theoretically, this leads to frustrations which are translated into aggression against the political system. This is seen as the culprit in the situation, and thus political instability develops.

Some writers have undertaken empirical analysis of the frustration-aggression theory of political instability and economic development. For example, Martin Needler examined the linkage between increased aspirations and system response.⁸ A study of the correlation between expectations and political violence was conducted by Raymond Tanter and Manus Midlarsky.⁹ Also, Ronald Ridker studied the linking of unfulfilled aspirations and discontent.¹⁰

Two major studies of political instability, based on the frustration-aggression explanation, were Ivo and Rosalind Feierabend's study of aggressive behavior within polities and Ted Gurr's study of civil violence. The Feierabends concluded that aggression, which is reflected in political instability, is caused by "situations of unrelieved, socially

⁸Martin C. Needler, Political Development in Latin America: Instability, Violence and Evolutionary Change (New York: Random House, 1968), p. 56.

⁹Raymond Tanter and Manus Midlarsky, "A Theory of Revolution," Journal of Conflict Resolution, Vol. XI, No. 3 (September, 1967), p. 270.

¹⁰Ronald G. Ridker, "Discontent and Economic Growth," Economic Development and Cultural Change, Vol. XI (October, 1962), pp. 1-2.

experienced frustration.¹¹ Their analysis dealt with the difference or gap between expectations and achievement. This gap was quantified in a ratio of "social want satisfaction" to "social want formation."¹² They conceded that systematic frustration may not cause political instability if there are productive channels through which aggression can be expressed.¹³

The Feierabend study was a cross-polity study of eighty-four countries during the period from 1948 through 1962. Measures of intensity and frequency of acts of political instability were developed in the study. Also, a classification of thirty types of political instability acts was developed in the study. There is a consensual scale that estimates different intensity levels of aggressive behavior in instability events. Each specific event receives one of seven scale values (zero connotes an absence of instability while six indicates extreme instability, and the in-between values indicate intermediate levels of instability). The weights assigned to each of the thirty types of events were validated by a team of judges working independently of the

¹¹Ivo K. and Rosalind L. Feierabend, "Aggressive Behaviors Within Politics: 1948 through 1962: A Cross-National Study," Journal of Conflict Resolution, Vol. X, No. 3 (September, 1966), p. 250.

¹²Ibid.

¹³Ibid., pp. 250-251.

authors and of each other. Their level of agreement was substantial (Pearson $r=0.87$).¹⁴

The Feierabends used a hypothesis in their study which is similar to hypotheses made by many writers who attempt to connect the process of economic development to political instability through the frustration-aggression theory. Their hypothesis is as follows:

The highest and the lowest points of the modernity continuum in any given society will tend to produce maximum stability in the political order, while a medium position on the continuum will produce maximum instability.¹⁵

The results of the Feierabend's study indicated that frustration is related to political instability at the high and low points.¹⁶ The study revealed that each indicator of want formation and want satisfaction was importantly related to political instability.¹⁷ They were unable to prove the hypothesized curvilinear relationship.¹⁸

Ted Gurr's study of civil violence was based on the frustration-aggression theory.¹⁹ Gurr stated that civil

¹⁴Ibid., p. 252.

¹⁵Ibid., p. 257.

¹⁶Ibid., p. 258.

¹⁷Ibid., p. 259.

¹⁸Ibid., p. 262.

¹⁹Ted Robert Gurr and Charles Ruttanburg, The Conditions of Civil Violence: First Tests of a Causal Model, Research Monograph No. 28, (Princeton, New Jersey: Princeton University Center of International Studies, 1967).

violence was caused by "frustration-induced anger."²⁰ He used the term "relative deprivation" which is often used in the literature in reference to the frustration-aggression thesis. Relative deprivation was defined by Gurr as a ". . . perceived discrepancy between men's value expectations and their value capabilities." He explains that:

. . . Value expectations are the goods and conditions of life to which people believe they are rightfully entitled. Stated capabilities are the goods and conditions they think they are capable of attaining or maintaining, given the social means available to them.²¹

In a later work, Gurr outlined the primary causal sequence in political violence as ". . . first, the development of discontent, second, the politicization of that discontent, and finally, its actualization in violent action against political objects and actors." He reasons that "Discontent arising from the perception of relative deprivation is the basic, instigating condition for participants in collective violence."²² This study also illustrated the difference between the value expectations of a group and their environment's value capabilities.²³ It is reasoned that frustration is born when individuals and groups perceive a difference

²⁰Ibid., p. 1.

²¹Ted Robert Gurr, Why Men Rebel (Princeton, New Jersey: Princeton University Press, 1970), p. 13.

²²Ibid., pp. 12, 13.

²³Gurr and Ruttenger, The Conditions of Civil Violence: First Tests of a Causal Model, p. 3.

between what they want and what they think they will get under the present system. The major hypothesis of this study is:

The occurrence of civil violence presupposes the existence of relative deprivation among substantial numbers of individuals in a society; concomitantly, the more severe the relative deprivation, the greater the likelihood and magnitude of civil violence.²⁴

Gurr also included instigating and mediating variables in the model to explain intensity of commitment to goals and the existence of blocked opportunities for achieving goals.

The Gurr study was a cross-polity study which covered 119 countries using data based on violent events from 1961. The study used multiple regression analysis of various indices of relative deprivation, value expectation, value capabilities, mediating and instigating variables, and civil violence. This study altogether used twenty-nine separate indicators. The civil violence variable was scaled in magnitude of civil violence. The regression analysis was performed for all 119 countries and for groups of countries based on political systems, technological development, size, and socio-cultural characteristics.

The findings of this study were numerous. Relative to this study, it is important to note that Gurr found no relationships between economic growth rates and civil violence. The key economic indicators of per capita income and civil violence were found to be only slightly related in a curvilinear way. Gurr concludes that: "There is no evidence

²⁴Ibid., p. 5.

that any particular level of economic performance is a necessary, sufficient, or strong disposing condition for civil peace."²⁵ Of particular interest to this study, Gurr found that the mediating variable of the capacity of the political system for repression was slightly related to the likelihood of one form of civil violence, internal war.²⁶

James C. Davies points to the society's state of mind as a decisive factor in political instability. He states that:

. . . Revolutions are most likely to occur when a prolonged period of objective economic and social development is followed by a short period of sharp reversal. The all-important effect on the minds of people in a particular society is to produce, during the former period, an expectation of continued ability to satisfy needs--which continue to rise--and, during the latter, a mental state of anxiety and frustration when manifest reality breaks away from anticipated reality.²⁷

He reasoned that the actual social or economic development progress is less important than the expectations which past progress has implied.²⁸

²⁵Ibid., p. 70.

²⁶Ibid., p. 69.

²⁷Revolutions in this case are defined as violent civil disturbances that cause the displacement of one ruling group by another that has a broader popular basis for support. See James C. Davies, "Toward a Theory of Revolution," Anger, Violence and Politics, Theories and Research, eds. Ivo K. Feierabend, Rosalind L. Feierabend, and Ted Robert Gurr (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 68.

²⁸Ibid.

Recent Cross-Polity Studies

Two recent unpublished cross-polity studies of the relationship between economic development and political instability provide hypotheses, data elements, methods of analysis, and conclusions which are of particular interest to this research project. The first study, by Delbert Joseph Ringquist in 1971, was a cross-national (polity) study of twenty-four former French colonies. The first purpose of this study was to compare these new countries for their relative levels of political instability and national development during two separate time intervals, 1960 through 1963 and 1966 through 1968.²⁹ An additional purpose of the research was to examine the possible linkages between political instability and national development.³⁰ Several hypotheses were proposed concerning the relationship between political violence and national development. The following three hypotheses are germane to this study.

- H₁ The scale (intensity) of political violence will be inversely correlated with the level of development.
- H₂ The "rate" of development is positively related to the rate of occurrence of political violence.

²⁹Delbert Joseph Ringquist, "Cross-National Patterns of Development and Political Violence in Countries Formerly Under French Rule," (Ph.D. dissertation, The University of Oklahoma, 1971), p. 2.

³⁰Ibid.

H₃ The intensity of political violence is likely to decrease as nations move from one stage of political, social and economic development to another.³¹

Ringquist developed broad factors of political development such as urbanization, communications, recruitment, education, economics and social indicators, all of which were examined empirically through factor analytical techniques.³² The political instability events were scaled in terms of an intensity-weighting that assigned values on a four-point scale. Changes in the relative levels of violence for the countries in the study over time were evaluated.

Significant finds of the Ringquist study were:

. . . (1) Development level is not significantly related to political violence level for the least developed nations; (2) Increases in developmental level over time are likely to be accompanied by increases in political violence over time; (3) The theory of relative deprivation when operationalized by utilizing wealth and education/urbanization factors previously discussed goes a long way toward making it possible to profile patterns where violence is likely to be increasing or decreasing over time as these factors change; and (4) Using a wide range of data on political variables we have been able to profile political characteristics of stable and unstable political systems.³³

The second study by Leila Hucko Fraser, also in 1971, was a cross-polity study of seventy-four countries which had populations of at least 800,000 in 1955 and had been

³¹Ibid., p. 9.

³²Ibid., pp. 32, 33.

³³Ibid., p. 280.

independent for at least two years as of 1955.³⁴ The objective of this research was to determine the relationship between economic development and political instability.³⁵ The study utilized four of Rummel's nine indicators of political instability which were weighted based on the suspected degree of instability which each indicator represented.³⁶ These indicators were compared with economic indicators such as GNP per capita, ratio of agricultural workers/labor force, and GNP growth rates.³⁷ The major intent of this thesis was to investigate the curvilinear theory of political instability. Therefore, the major hypothesis was:

. . . Across nations, economic development and political instability are curvilinearly related, with low levels of political instability occurring at both low and high levels of economic development and high levels of political instability occurring at middle levels of economic development.³⁸

In addition to the economic and political instability variables, a list of societal variables were also examined

³⁴Leila Hucko Fraser, "A Cross-National Analysis of Political Instability and Economic Development," (Ph.D. dissertation, University of Illinois at Urbana-Champaign, 1971), p. 28.

³⁵Ibid.

³⁶Ibid., pp. 30, 31.

³⁷Ibid., pp. 32, 33.

³⁸Ibid., p. 34.

under other minor hypotheses utilizing a multiple step-wise regression technique.³⁹

The results of the entire data analysis lead to one major conclusion about the validity of the main hypothesis concerning the existence of a curvilinear relationship between economic development and political stability; the data for these countries in the time period studied do not support it.⁴⁰

. . . There is no curvilinear relationship of any importance between economic development and political instability.⁴¹

. . . On the whole, however, economic development does not explain much variation in political instability, nor does political instability explain much variation in the level of economic development.⁴²

However, Fraser also concluded that:

When the effect of political capabilities was considered independently of economic development, capabilities were found to account for much more variation in political instability than the economic development variables alone.⁴³

The author also indicated that other societal variables better explain political capabilities and economic development but that ". . . in general, then, economic development variable were not found to be important for political stability nor were political stability variables found to

³⁹Ibid., p. 168.

⁴⁰Ibid.

⁴¹Ibid.

⁴²Ibid., pp. 169, 170.

⁴³Ibid., p. 174.

be important for economic development when other variables were considered."⁴⁴

Marketing and Economic Development

Marketing is an essential business activity in every national economy whether the economy is developed or developing. Economic development planners have, in most cases, either ignored the role of marketing as a factor which influences economic growth or relegated it to a position of marginal importance.⁴⁵ Marketing has been traditionally ignored as a factor in economic development in less-developed countries. Drucker states that ". . . in every 'under-developed' country I know of, marketing is the most under-developed--or the least developed--part of the economy."⁴⁶ The very relevance of marketing to the economic development process has been questioned.⁴⁷ It is frequently argued that in the less-developed economies, the major problem is the allocation of scarce resources into production needs. It is argued that priorities should be on how to increase output

⁴⁴Ibid.

⁴⁵David Carson, International Marketing, A Comparative Systems Approach (New York: John Wiley and Sons, Inc., 1967), p. 158.

⁴⁶Peter F. Drucker, "Marketing and Economic Development," Journal of Marketing, Vol. 22 (January, 1958), p. 254.

⁴⁷Warren J. Keegan, Multinational Marketing Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974), p. 61.

and not upon customer needs and wants.⁴⁸ It has been assumed that the link between producers and consumers will be provided automatically as marketing firms spring up in response to opportunities.⁴⁹ This viewpoint was summarized by Moyer, who states that development planners have neglected marketing in their plans. Development planners contend that:

. . . marketing is a self-adjusting mechanism that alters itself in response to changes in the rest of the economic system. Being both a passive and automatically adjusting mechanism, marketing, it is argued, can be ignored.⁵⁰

Many justifications for ignoring the role of marketing in economic development have been advanced. Some of these are: the existing distribution system is felt to be adequate or cannot be changed in the near time frame; the producer firms can provide their own distribution of outputs; returns on investments in marketing are low compared to other investments; subsidies, credits and taxes do not favor marketing; and skills and resources are not available for marketing development.⁵¹

⁴⁸ Ibid.

⁴⁹ N. R. Collins and R. H. Holton, "Programming Changes in Marketing in Planned Economic Development," Kyklos, Vol. V., 1963, p. 123.

⁵⁰ Reed Moyer, "Marketing in Economic Development," Occasional Paper No. 1 (East Lansing, Michigan: Institute for International Business Studies, Michigan State University, 1965), p. 2.

⁵¹ David Carson, International Marketing, A Comparative Systems Approach, pp. 12-23.

Additional writers point to other rationals for failing to fully consider marketing in economic development planning. For example, Holton lists six principal reasons for the absence of any consideration of the distribution problem in developmental literature:⁵²

1. The distribution function produces primarily services rather than new goods.
2. The production of distribution is difficult to measure and evaluate due to a lack of data in less-developed areas.
3. The work force employed in distribution and their contribution to national income is difficult to measure.
4. Distribution provides a role for the unemployed by means of high margins and prices with which planners are reluctant to tamper.
5. The area has been largely ignored by trained economists except in recent years.
6. The general acceptance of the Colin Clark and Allen G. B. Fisher thesis to the effect that tertiary production is of much less importance in less-developed economies.

Moyer is in agreement with Holton's position for not ignoring marketing in economic development, but also states that an additional justification is that distribution skills are not transferable between economies.⁵³

⁵²Richard B. Holton, "Marketing Structure and Economic Development," The Quarterly Journal of Economics, Vol. LXVII, No. 3 (August, 1953), pp. 344-346. Since this date there has been progress in some of the areas cited by Holton.

⁵³Reed Moyer, "The Structure of Markets in Developing Economies," Business Topics, Vol. 12, No. 4 (Autumn, 1964), p. 124.

Even though marketing has been neglected in the less-developed countries in favor of manufacturing, construction and improvements in agricultural outputs, marketing can in fact be a leading sector in economic development.⁵⁴ Drucker has pointed to marketing as potentially the most effective engine of economic development. He states that:

My thesis is very briefly as follows. Marketing occupies a critical role in respect to the development of such 'growth' areas. Indeed, marketing is the most important 'multiplier' of such development.⁵⁵

The two major specific contributions of marketing to the less-developed economies are considered by Drucker to be:

- a. Its ability to develop a group of entrepreneurs and managers, and
- b. Its contribution as a systematic discipline which lends itself to an expeditious teaching-and-learning process.⁵⁶

Marketing development writers have noted specific functions performed by marketing which assist economic development. The following six functions are cited by Moyer.⁵⁷

1. An information organizing and physical facilities function.
2. An equalizing and distribution function.

⁵⁴N. R. Collins and R. H. Holton, "Programming Changes in Marketing in Planned Economic Development," Kyklos, p. 124.

⁵⁵Peter F. Drucker, "Marketing and Economic Development," Journal of Marketing, p. 252.

⁵⁶Ibid., pp. 252-256.

⁵⁷Reed Moyer, Marketing in Economic Development, pp. 12-13.

3. A connective function.
4. A capitalistic function.
5. A source of entrepreneurial talent.
6. A source of capital.

Moyer emphasizes the connective function by stating:

. . . There is abundant evidence throughout economic history that marketing has played a key organizing role; hence, it has been an indispensable partner in economic progress.⁵⁸

Marketing is an equal partner with production in the development of a national economy.

Marketing development is frequently explained in the over-all context of national economic growth and development. The five general stages of economic growth developed by Rostow provide a convenient vehicle for explaining national marketing development.⁵⁹ Some parallels between marketing development and Rostow's concept of over-all economic development can be drawn. During the "traditional society" stage, the process of distribution takes place largely within the family, extended family or tribe, based on group accepted precepts. Transactions are frequently based on barter and are managed by the elite members of the society. During the second stage, "pre-conditions for take-off," both trade and modern manufacturing grow but there is not a clear distinction of functions. For example, frequently the wholesaling and retailing functions are mixed and may be carried on by

⁵⁸Ibid., pp. 13-14.

⁵⁹David Carson, International Marketing, A Comparative Systems Approach, pp. 177-183.

the same business firm. The third, or "take-off" stage, is distinguished by the rapid expansion of new industry and a corresponding rapid rise in the specialization of the distribution function with respect to kinds of merchandise sold, price, and location. During the fourth state, "the drive to maturity," the distributive trades account for an increased share of total employment but lag behind production in productivity gains. In stage five, "the age of high mass-consumption," there is giantism in distribution as well as finance, production, labor organization, and centralized political control of the economy.⁶⁰

Prior to the Rostow explanation, William Copulsky, a writer in marketing development, postulated five phases of economic development as follows:⁶¹

1. The pre-industrial or commercial phase. There is limited use of machines but there is transportation commerce and an exchange system.
2. Primary manufacturing phase. This phase is characterized by the limited manufacture of indigenous resources for export and domestic consumption.
3. The production of non-durable and semi-durable consumer finished goods. This phase involves the manufacture of consumables from both imported raw materials and domestic raw materials largely for sale in the domestic market.

⁶⁰For a complete discussion of the parallels of marketing and economic development, see David Carson, International Marketing, A Comparative Systems Approach, pp. 177-183.

⁶¹William Copulsky, "Forecasting Sales in Under-developed Countries," Journal of Marketing, Vol. 24, No. 1 (July, 1959), pp. 36-37.

4. The production of capital goods and consumer durable goods. This phase involves the production of capital machinery for domestic use and the manufacture of large consumer goods, such as automobiles, household appliances, and related intermediate goods.
5. Exports of manufactured products. In this phase the country passes out of the "under-developed" status.

These periods are strikingly similar to those developed by Rostow.

Warren Keegan used per capita income thresholds to classify stages of marketing development as follows.⁶²

1. Pre-Industrial Societies--Incomes under \$60 per capita.
2. Under-developed Countries--Incomes range from \$70-\$240 per capita.
3. Semi-developed Markets--Incomes range from \$250-\$790 per capita.
4. Developed Countries--Incomes range from \$800-\$2500 per capita.
5. Affluent Societies--Incomes above \$3600 per capita.

Other writers have used non-economic criteria in an attempt to explain marketing development. For example, Ernest Dichter chose the automobile as the most important symbol of middle class values and contrasted attitudes toward automobiles in six country groupings based on the size and development of the middle class.⁶³ The above techniques are useful in

⁶²Warren J. Keegan, Multinational Marketing Management, pp. 51-56.

⁶³Ibid., pp. 56-57.

explaining the broad concepts of marketing development in less-developed countries.

The Concept of a National Market

The less-developed countries of the world are characterized by very narrow and limited markets. Many writers believe that only through the expansion of national markets is it possible to develop the economies of less-developed countries.⁶⁴ The increase in market size is important to economic development for several reasons. First, an increase in the size of markets makes it economically feasible to capitalize upon various economies of scale in both production of goods and services. The benefits of mass production can only be reaped at certain levels of output. Second, the growth of markets can reduce the need for working capital on the part of consumers. The consumer can benefit from an enlarged market by reducing his preparation for consumption contingencies. Therefore, capital is released for increased consumption, further economic growth, or both. The organization of larger markets allows the movement of production

⁶⁴A well-known proponent of this idea is Walt W. Rostow. The need to increase the size of national markets was emphasized by Leon V. Hirsch. See Walt W. Rostow, "The Concept of a National Market and Its Economic Growth Implications," in Fall Conference Proceedings, ed. Peter D. Bennett, Marketing and Economic Development (Chicago: American Marketing Association, 1965), pp. 11-20, and Leon V. Hirsch, "The Contribution of Marketing to Economic Development-A Generally Neglected Area," in Winter Conference Proceedings, ed. William D. Stevens, The Social Responsibilities of Marketing (Chicago: American Marketing Association, 1962), pp. 413-443.

factors such as labor, and capital over a wider area where they can be used more efficiently.⁶⁵

The particular importance of a national market to the development of marketing operations in a less-developed country has been extensively commented upon by Walt Rostow.⁶⁶ He has observed that individual nations begin the process of modernization at different points in their national growth. However, Rostow states that most countries begin the process of economic development in two basic areas: the production of manufactured goods, and the development of the basic infrastructure of transportation, communications and utilities.⁶⁷ Rostow's view on economic sector development suggests that, although some agricultural development may take place during the development of basic manufacturing and infrastructure facilities, there is a general neglect of the agricultural sector of the economy of less-developed countries. The concentration on the industrial sector is reasoned by Rostow to be legitimate, as there is a need to diffuse modern science and technology in the economy. However, he considers the concentration on the industrial sector to be illegitimate on two counts. First, agriculture which can provide food, raw

⁶⁵ Leon V. Hirsch, "The Contribution of Marketing to Economic Development-A Generally Neglected Area," p. 414.

⁶⁶ Walt W. Rostow, View From The Seventh Floor (New York: Harper and Row, Publishers, 1964), pp. 132-144, and Walt W. Rostow, "The Concept of a National Market and Its Economic Growth Implications," pp. 11-20.

⁶⁷ Walt W. Rostow, "The Concept of a National Market and Its Economic Growth Implications," p. 12.

materials and foreign exchange, is ignored. Second, the industrial development is centered in a few cities, tending to create developmental imbalance.⁶⁸

Rostow contends that economic development will not progress beyond the level at which domestic production substitutes for import consumables unless modern skills are diffused into the rural areas of the developing countries. He sees a need for these countries to:

. . . convert their somewhat isolated urban industrial concentrations into active, dynamic centers which purposely diffuse the process of modernization out across the nation, while they generate the capacity, on this wider market foundation, to pay their way as they move to full industrialization of their societies.⁶⁹

The embryo industrialized sector is the basis for the expansion of a national market.

A national market in the less-developed countries would be fully integrated in which the small industrial sector would manufacture consumables for the national market. The agricultural sector provides markets for the goods produced in the urban sector; it also provides food stuffs and raw materials for the urban sector. In order to develop a large national market in the less-developed countries, there must exist a two-way marketing street between the rural sector and the urban sector. The urban sector must provide an ever-widening assortment of manufactured goods for consumption

⁶⁸Ibid.

⁶⁹Ibid., p. 13.

and industrialization of the agricultural sector at reasonable prices. Essential to this development is the flow of a sufficient amount of food at stable and lower prices from the rural to the urban sector.

Rostow points specifically to how a national market can be formed in the less-developed countries:

Now, how do you do it? How do you make a national market, starting from the kind of distorted situation that can be observed in the world around us?

I suggest that there are four major jobs that must be done and they should be done simultaneously as part of a conscious national strategy, shared by the public and private authorities. The four elements are these: a build-up of agricultural productivity; a revolution in the marketing of agricultural products in the cities; a shift of industry to the production of simple agricultural equipment and consumers' goods for the mass market; and a revolution in marketing methods for such cheap manufactured goods, especially in rural areas.⁷⁰

This suggestion requires several major shifts in emphasis in the national economy. In addition to the strategy of marketing development outlined above, there must be shift in public resources to agriculture and a corresponding change in the content and direction of industrial output.

Rostow enumerates four necessary and sufficient conditions that must be met in order to modernize the rural sector as an essential step in the development of a national market.

First, the farmer must receive a reliable and fair price for his product.

⁷⁰Walt W. Rostow, View From The Seventh Floor, p. 136.

Second, credit must be available at reasonable rates for him to make the change in the character of his output or the shift in productivity desired.

Third, there must be available on the spot technical assistance that is relevant to his soil, his weather conditions, and his change in either output or in productivity.

Finally, there must be available at reasonable rates two types of industrial products: inputs such as chemical fertilizers, insecticides, and farm tools; and incentive goods--that is, the consumer goods of good quality he and his family would purchase in greater quantity or work harder to get if they were cheaper or if his income were higher.⁷¹

The four point plan for developing a national market and the four conditions required for this development specified by Rostow are in effect problems related to economic structural distortions during the development process. These problems must be solved effectively if a national market is developed. Marketing can aid in the solution of these distortions in two ways. First, more efficient and cheaper marketing systems must be developed for the marketing of agricultural outputs from the rural to the urban areas. Secondly, there must be improvements in the marketing practices of manufactured outputs in the rural sector and in the marketing of essential agricultural inputs of fertilizers, tools and pesticides. There must be a proper balance achieved between the development of both the urban and the rural sectors in order to realize the goal of a national market.

⁷¹Walt W. Rostow, "The Concept of a National Market and Its Economic Growth Implications," pp. 14-15.

What Is Marketing?

Marketing means different things to different people. The variations in meaning stem from differences in viewpoints, not from differences in the activity itself. There are two basic concepts of marketing which are known as the macro and micro view. The macro view is a total aggregate process engaged in by private enterprise in a society of private property and freedom of exchange. The narrow or micro viewpoint is restricted to the activities of the private individual enterprise rather than the society as a whole.

The broad view of marketing has been expressed as the performance of business activities that direct the flow of goods and services from producers to consumers,⁷² an intricate division of labor resulting in economic specialists responsible for guiding the choices among alternative uses of resources,⁷³ an economic process by means of which goods and services are exchanged and their values determined in money prices,⁷⁴ the exchange taking place between consuming and

⁷²R. S. Alexander, Chairman, Committee on Definitions, American Marketing Association, Marketing Definitions: A Glossary of Marketing Terms (Chicago: American Marketing Association, 1960), p. 15.

⁷³R. Cox, C. Goodman, and T. Fichandler, Distribution in a High-Level Economy (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 14.

⁷⁴Edward A. Duddy and David A. Revzan, Marketing (New York: McGraw-Hill Book Co., Inc., 1953), p. 6.

supplying groups,⁷⁵ the delivery of a standard of living,⁷⁶ the social science concerned with market transactions,⁷⁷ the process of adding value to goods and services,⁷⁸ and "the process in a society by which a demand structure for economic goods and services is anticipated or enlarged and satisfied through the conception, promotion, exchange, and physical distribution of goods and services."⁷⁹

The narrow view of marketing has been expressed as business activities which direct the flow of goods and services which in turn satisfy customers and meet the objectives of the firm,⁸⁰ as a system of interacting business activities designed to plan, price, promote and distribute want-satisfying products and services to present and potential customers,⁸¹ a collection of external management

⁷⁵Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard D. Irwin, Inc., 1957), p. 15.

⁷⁶Paul Mazur, "Does Distribution Cost Enough?" Fortune, November, 1947, p. 138.

⁷⁷Lincoln Clark, "Consumer Behavior and Research," University of Missouri Business and Economic Review, September-October, 1960.

⁷⁸Charles H. Hindersman, "Marketing Defined-A Theoretical Explanation," Cornell Business Bulletin, School of Business, John Carrol University, (Cleveland, Ohio), October 1961, p. 117.

⁷⁹The Marketing Staff, Ohio State University, "A Statement of Marketing Philosophy," Journal of Marketing, Vol. 29, No. 1 (January 1965), p. 43.

⁸⁰E. M. McCarthy, Basic Marketing (Homewood, Illinois: Richard D. Irwin, Inc., 1964), p. 16.

⁸¹W. J. Stanton, Fundamentals of Marketing (New York: McGraw-Hill Book Co., Inc., 1964), p. 5.

functions related to a company's profit objectives,⁸² as the income-producing side of the business,⁸³ as the integrator of the management functions of planning, directing and controlling in an enterprise which will provide customer satisfaction,⁸⁴ the process of focusing the resources and objectives of an organization on opportunities and needs,⁸⁵ and ". . . the operations of a business that determine and influence existing and potential demand in the marketplace and that activate the supply of goods and services to meet this demand."⁸⁶

There is no single meaning or definition of marketing. The concept and understanding of "what is marketing?" has continued to change since its recognition as a separate area of study. Two scholars of marketing recently noted that:

Marketing has undergone continued introspection and change ever since it was recognized as a field central to the study of business administration. . . . two major themes are seen as predominantly influencing contemporary marketing literature,

⁸²G. Marwell Ule, "How to Identify and Define Marketing Problems," in David W. Ewing, ed., Effective Marketing Action (New York: Harper and Bros., 1958), p. 85.

⁸³Malcolm P. McNair, Milton P. Brown, David S. R. Leighton, and Wilbur B. Englent, Problems in Marketing (New York: McGraw-Hill Book Co., Inc., 1951), p. 2.

⁸⁴Martin L. Bell, Marketing Concepts and Strategy (Boston: Houghton Mifflin Company, 1966), p. 22.

⁸⁵Warren J. Keegan, Multinational Marketing Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974), p. 5.

⁸⁶Harry A. Lipson and John R. Darling, Marketing Fundamentals: Text and Cases (New York: John Wiley and Sons, Inc., 1974), p. 6.

education and practice. The first of these themes concerns the managerial approach to marketing, while the second is concerned with the social aspect of marketing.⁸⁷

As suggested earlier, the social aspects of marketing encompass the broad or macro view while the managerial approach to marketing is identified with the narrow or micro viewpoint.

Marketing Activities

Like the major definitions of marketing, the various approaches to the study and practice of marketing can conveniently be divided into the same two groups in terms of marketing activities and operations in a society. The commodity, institutional, and functional approaches to marketing are useful in explaining both macro and micro marketing activities. However, these techniques have been most useful in macro marketing analysis.⁸⁸ The managerial approaches to marketing have likewise been identified largely with the study and analysis of micro activities of marketing which are restricted to the individual firm.

The commodity approach examines the individual commodities with respect to their sources, supply, demand, channels of distribution and any special features. The institutional approach examines the various organizations, such as wholesalers, retailers and other middlemen who

⁸⁷Eugene J. Kelly and William Lazer, Managerial Marketing Policies, Strategies, and Decisions (Homewood, Illinois: Richard D. Irwin, Inc., 1973), p. 3.

⁸⁸Eugene J. Kelly, Marketing: Strategy and Functions (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 14.

facilitate the movement of goods and services from producers to consumers. The functional approach breaks down the entire marketing process into a number of basic functions which must be performed in the marketing of all products and services within a society.

This study is concerned with the macro or aggregative functions of marketing in the national economy of a less-developed country. The managerial marketing activities of the individual firm are important to the study only as they influence the development of marketing within the national economy.

The study of commodities is very time consuming, if all products are covered, and tends to portray a fragmented picture of national marketing. The examination of marketing institutions tends to overlook the individual forces that comprise institutional behavior and does not explain the relationship between the behavior of firms in a national market. The functional approach tends to be deficient in that it does not assign any essentiality to various tasks, but ascribes equal importance to each task. However, it does provide clear indicators of operational work which can be evaluated in a macro sense in a national market.

Marketing, like fishing, farming, mining and manufacturing, is an economic process in a national economy. The economic process of marketing requires the performance of certain functions. These functions are major economic activities which, through a continuous division of labor,

tend to become specialized.⁸⁹ The marketing functions are thus derived from homogenous groups of economic activities which are necessary for the distribution of goods and services from the producers to the consumers in a national economy. There is little agreement as to the appropriate number or classification of marketing functions.⁹⁰ The number of marketing functions vary from as few as six to as many as 120.⁹¹

A widely used list of eight functions of marketing was developed by Beckman, who grouped them into three categories as follows:

1. Functions of Exchange
 - a. Buying
 - b. Selling
2. Functions of Physical Distribution
 - a. Transportation
 - b. Storage
3. Facilitating Functions
 - a. Standardization and Grading
 - b. Financing

⁸⁹Theodore N. Beckman, William R. Davidson, and W. Wayne Talarzyk, Marketing (Ninth Edition) (New York: The Ronald Press Company, 1973), p. 19.

⁹⁰R. M. Alexander, F. M. Surface, R. E. Elder and W. Alderson, Marketing (Boston: Ginn and Company, 1944), p. 89.

⁹¹Franklin W. Ryan, "Functional Elements of Market Distribution," Harvard Business Review, Vol. 13, No. 1 (July 1935), p. 214.

c. Risk Bearing

d. Marketing Information.⁹²

It was reasoned by Beckman that these functions of marketing created place, time, or possession utility and, therefore, added value to products and services similar to the way in which form utility in manufacturing adds value to products which it creates.⁹³

Also, there is a lack of agreement as to the purpose of marketing functions. McGarry suggests that marketing functions should be tied to their purpose in society and should be used to focus attention on the relationship of the marketing system to the environmental field in which it operates.⁹⁴ He further suggested that the functions of marketing could be performed by buyers, sellers, producers and consumers. McGarry enumerated six marketing functions as follows:

1. The contractual function is the searching out of buyers and sellers and the establishment of communications in the market.
2. The merchandising function is a task of fitting the goods to meet the needs and desires of consumers or users.
3. The pricing function is the selection of prices at which production is possible and goods are acceptable to the users.

⁹²Theodore N. Beckman, et al., Marketing, p. 20.

⁹³Theodore N. Beckman, "The Value Added Concept as Applied to Marketing and Its Implications," Frontiers in Marketing Thought, S. H. Rehwoldt, ed. (Bloomington, Indiana: Bureau of Business Research, Indiana University, 1954), pp. 83-89.

⁹⁴E. S. McGarry, "Some Functions of Marketing Reconsidered," Wroe Alderson and R. Cox, eds., Theory in Marketing (Chicago: Richard D. Irwin, Inc., 1950), p. 278.

4. The propaganda function is the conditioning of buyers and sellers to a favorable attitude which will result in the selection of a particular product.
5. The physical distribution function is the transportation and storage of goods.
6. The termination function is the transaction which results from the other five preparatory functions.⁹⁵

He notes the essentiality of these functions to economic development by stating that:

. . . The development and refinement of these functions has been a major factor in the attainment of high-level consumption in free-enterprise countries, and it is difficult to conceive that any system of economy can reach such high levels without developing machinery to perform these functions.⁹⁶

In addition to the previously described operational functions of marketing, there is also a social function ascribed to the broad understanding of marketing in a national economy. This social function extends beyond the traditional economic process and the managerial process associated with marketing functions performed by middlemen, producers, consumers and others. The social function is the interaction of all people in the broad process of economic want-fulfillment.⁹⁷ This view of marketing, as a social process, does not alter the importance of marketing functional specialization or marketing managerial decision making. The

⁹⁵Ibid.

⁹⁶Ibid., p. 279.

⁹⁷Robert Bartels, "Marketing Technology, Tasks, and Relationships," Journal of Marketing, Vol. 29, No. 1 (January 1965), p. 48.

social function adds a new dimension to marketing which aids in the understanding of the marketing process in a dynamic society.⁹⁸

The study of marketing as an applied social science, which is suggested by the social function, was beyond the scope of this study of marketing in a less-developed country. Therefore, the analysis of the social function of marketing in this study was limited. Instead, the study focused on the macro marketing functions related to exchange, physical supply and the associated functions which facilitate the performance of marketing operations in a national market.

Marketing Defined for the Purpose of This Study

Marketing in South Vietnam encompassed more than the elementary functions of buying and selling. There was a traditional marketing system for basic commodities which underwent significant change during the period of this study.⁹⁹ In addition to the traditional marketing system, a limited modern marketing system was developed on the basis of the French Colonial system which had been established in South Vietnam prior to 1954.¹⁰⁰ Both systems were oriented

⁹⁸The Marketing Staff, Ohio State University, "A Statement of Marketing Philosophy," Journal of Marketing, Vol. 29, No. 1, (January 1965), p. 44.

⁹⁹Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam (Cambridge, Massachusetts: The Massachusetts Institute of Technology Press, 1970), pp. 101-103.

¹⁰⁰Joint Economics Office of the United States Mission to Vietnam, A Study of Commercial Distribution of Agriculture Inputs in the Mekong Delta of Vietnam (Saigon: Agency for International Development, 1968), pp. 33-35.

toward the marketing functions required for the distribution of goods and services in the domestic economy and overseas.¹⁰¹

Businesses which engaged in distribution were prevalent throughout the country of South Vietnam. They organized themselves along institutional lines into firms which specialized in such areas as importing-exporting, wholesaling, retailing, transporting, warehousing, financing, insuring and banking.¹⁰² Only in the latter period of this study, did advertising and related promotional activities become important incidental with the introduction of television and other modern communications media.¹⁰³ The marketing activities of a limited number of middlemen had traditionally included advertising, promotion and product development.

For the purposes of this study, attention was focused on the macro aspects of marketing as it relates to economic development in a less-developed country. All aspects of marketing, as it relates to economic development, cannot be considered in the study. Therefore, the emphasis was on

¹⁰¹James D. Mietus, The Vietnamese Economy (Groton-on-Hudson, Connecticut: Hudson Institute, Inc., Discussion Paper, HI-1072-DP, 23 August 1968), pp. 15-16.

¹⁰²Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 283, and Business International Asia/Pacific Ltd., Risks and Rewards in Vietnam's Markets (Hong Kong: Business International Asia/Pacific Ltd., 1974), pp. 69-72.

¹⁰³Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 289.

marketing distribution and facilitating activities. Considering the purpose served, and the level of marketing development present, the following operational definition for marketing in South Vietnam is adopted for the study:

Marketing is the performance of business or government activities that direct the flow of goods and services from domestic or foreign producers to consumers or users.¹⁰⁴

Research in Political Instability and Marketing Development

Marketing development is a broad subject. From 1946 to 1975, the Journal of Marketing, a major U.S. Academic Publication in marketing, has published eighty articles on international and foreign marketing which have addressed many of the aspects of marketing development. This research project was concerned with only one aspect of marketing development. The focus was primarily on the relationship between marketing development and political violence in South Vietnam from 1955 through 1972.

There are no known studies which measure the impact of political violence on the development of marketing in South Vietnam. This researcher was unable to locate any studies in which marketing development under the general conditions of political instability has been evaluated. It is logical to assume that if such a comparison is made, the target

¹⁰⁴ Adopted from R. S. Alexander, Chairman, Committee on Definitions, American Marketing Association, Marketing Definitions: A Glossary of Marketing Terms (Chicago: American Marketing Association, 1960), p. 15.

country or countries will be classified as less-developed countries because of the prevalence of political violence in less-developed countries.

Some studies have been conducted which evaluate the relationship between political instability and foreign marketing investment. Aharoni, in a study of firms making foreign investment, found two important criteria that a country must meet in order to be considered as a prospect for investment. First, the country must demonstrate political and economic stability. Secondly, the country must have an adequate market to support the investment.¹⁰⁵ The findings of this study were confirmed by Basi. His study utilized 214 executives rankings of the relative importance of fifteen foreign investment decision variables. Basi found that the political stability of a foreign country and the extent of the potential market were the two most important considerations in making a foreign investment.¹⁰⁶

In a study sponsored by the National Industrial Conference Board, political instability was found to be a primary factor obstructing business-government relations in the less-developed countries.¹⁰⁷ Specifically, the study

¹⁰⁵Yair Aharoni, The Foreign Investment Decision Process (Boston: Harvard University Graduate School of Business, 1966), pp. 93, 100.

¹⁰⁶R. S. Basi, Determinants of United States Private Direct Investment in Foreign Countries (Kent, Ohio: Kent State University, 1963), p. 12.

¹⁰⁷Karen Krause Bivens and Helen S. Lambeth, A World-Wide Look at Government-Business Relations (New York: National Industrial Conference Board, 1967).

reported that unstable governments were unwilling to protect or support private business enterprise when a given supportive action was unpopular in the country.¹⁰⁸ Businesses in foreign countries have found it difficult to deal with inexperienced government officials. Another author concludes that ". . . it is very doubtful that the government of developing nations can do much to attract private foreign investment given conditions of political instability."¹⁰⁹

In 1967 the Marketing Science Institute sponsored a study of the relationship between political instability and marketing opportunities.¹¹⁰ The nations of the world at that time were ranked according to their level of political instability based on three indicators: (1) deaths from internal violence, (2) cultural homogeneity, and (3) time duration of national identification. The nations were arrayed on a chart based upon their respective instability ratings.¹¹¹ Marketing opportunities were based on the nation's political instability chart. The study utilized three of the recognized indicators of political instability which are less extensive than other indicators used to

¹⁰⁸Ibid.

¹⁰⁹Franklin R. Root, "Attitudes of American Executives Toward Foreign Governments and Investment Opportunities," Economic and Business Bulletin, Vol. 20 (January, 1968), p. 22.

¹¹⁰A. A. Liander, et al., Comparative Analysis for International Marketing (Boston: Allyn and Bacon, 1967), p. 136.

¹¹¹Ibid., p. 138.

evaluate political instability.¹¹² The stated relationship was based on a visual inspection of the instability indicators as there was no apparent attempt to quantify the political instability indicators. Additionally, what is meant by marketing opportunity was not explained.

There is obviously a large void in the literature on political instability and marketing development in general. The measurement of the impact of political violence on marketing development and marketing related operations in a less-developed country has not previously been attempted. One author points to the fact that:

Too little is known about the manner in which international forces affect domestic marketing systems. Comparative marketing must, therefore, receive increased assistance from development economics, politics, and the behavioral sciences.¹¹³

There is some recognized need to investigate the impact of political violence on marketing development and operations.

Measures of Marketing Development in South Vietnam

Economic development has traditionally dealt with the transformation or change of the economic structure of a country. Frequently, economic development and economic

¹¹²Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, pp. 14-378.

¹¹³David Carson, International Marketing, A Comparative Systems Approach (New York: John Wiley and Sons, Inc., 1967), p. 519.

growth have been confused.¹¹⁴ Economic growth is simply an increase in wealth, while economic development is a broader concept which deals with technological improvements of the inputs to the economic process, the efficiency of the process itself and the distribution of outputs from the economic process.¹¹⁵ The economic development process has been characterized by "The changing relative importance of different types of economic activity--and particularly of commercial and service activities-- during the course of economic development."¹¹⁶ There was considerable debate during the late 1950s concerning the relative importance of different types of economic activity.¹¹⁷

Clark-Fisher-Petty Theory of Tertiary Production

As early as 1691, Sir William Petty proposed that
 ". . . there is much more to be gained by Manufacture than

¹¹⁴Everett E. Hagen, The Economics of Development (Homewood, Illinois: Richard D. Irwin, Inc., 1975), p. 3.

¹¹⁵Simon Kuznets, Modern Economic Growth: Rate, Structure and Spread (New Haven, Connecticut: Yale University Press, 1966). (An extensive coverage of economic development in modern history.)

¹¹⁶Dudley Seers, "The Meaning of Development," The Political Economy of Development and Underdevelopment, ed. Charles K. Wilber (New York: Random House, 1973), p. 7.

¹¹⁷Lee E. Preston, "The Commercial Sector and Economic Development," Markets and Marketing in Developing Economies, ed. Reed Moyer and Stanley C. Hollander (Homewood, Illinois: Richard D. Irwin, Inc., 1968), p. 9.

Husbandry and by Merchandise than Manufacture. . .¹¹⁸

Colin Clark, building upon this idea stated that:

Studying economic progress in relation to the economic structure of different countries, we find a very firmly established generalization that a high average level of real income per head is always associated with a high proportion of the working population engaged in tertiary industries.¹¹⁹

Professor Clark defined Primary industries as agriculture, forestry and fishing. Secondary industries were defined as manufacturing, mining and building, and he saw Tertiary industries as including commerce, transport, services and other economic activities.¹²⁰ He reasoned that:

. . . low real income per head is always associated with a low proportion of the working population engaged in tertiary production and a high percentage in primary production. High average real income per head compels a large proportion of producers to engage in tertiary production.¹²¹

Professor Fisher had previously presented a similar view by suggesting that:

We may say that in every progressive economy there has been a steady shift of employment and investment from the essential "primary" activities, without whose product life in even its most primitive forms would be impossible, to secondary activities of all kinds, and to still greater extent into tertiary production.¹²²

¹¹⁸Colin Clark, The Conditions of Economic Progress, 2nd ed. (London: MacMillan and Company, Ltd., 1951), pp. 395-396.

¹¹⁹Ibid., pp. 6-7.

¹²⁰Ibid., p. 7.

¹²¹Ibid.

¹²²A. G. B. Fisher, Economic Progress and Social Security (London: MacMillan and Company, Ltd., 1945), pp. 5-6.

In summary, the main thesis outlined by Clark, Fisher and Petty is that tertiary production is of less importance in developing economies than in industrialized market economies, and that economic development is indicated when there is a movement of the labor force from primary production to secondary production and then to tertiary production.

There were numerous critics of the Clark-Fisher-Petty thesis. First, the combining of marketing with finance and all forms of personal services was felt to weigh the analysis in favor of personal services and finance. Finance and personal services were considered to be dissimilar in the economies of various countries.¹²³ The character, scale and activities of marketing in developing countries were judged to be vastly different from the developed countries. Some of the key proponents of this argument were Bauer and Yamey,¹²⁴ Holton¹²⁵ and Minkes.¹²⁶ Bauer and Yamey argue that the percentage of workers in distribution may decrease at certain stages of economic development due to advancements in the art of communications, better internal security, stability of

¹²³Lee E. Preston, "The Commercial Sector and Economic Development," Markets and Marketing in Developing Economies, p. 10.

¹²⁴P. T. Bauer and B. S. Yamey, "Economic Progress and Occupational Distribution," Economic Journal, Vol. LXI (1951), pp. 741-755.

¹²⁵R. H. Holton, "Marketing Structure and Economic Development," Quarterly Journal of Economics, Vol. LXVII (1953), pp. 344-361.

¹²⁶A. L. Minkes, "Statistical Evidence and the Concept of Tertiary Industry," Economic Development and Cultural Change (1955), pp. 366-373.

markets and better utilization of all resources in distribution. They also contend that economies of scale result in an increase in the size and volume of trading units. This often results in a reduction of resources in distribution and a general improvement in productivity. They also cite imperfect occupational statistics and contend that there is decisive unemployment in backward economies because many people when queried about their employment did not consider trading to be an occupation. Paid labor may be substituted for unpaid labor and vice versa.¹²⁷ Holton notes that the distribution functions of assembly, bulking, transport, breaking of bulk and dispersing are likely to require large percentages of the population in primitive economies. He also notes that services such as medical, legal, education and government are of increased importance because of their increased demand as incomes rise.¹²⁸ Minkes points to the vast difference in marketing scale and activities in the less-developed countries.¹²⁹ Preston points out that considerable development has taken place around the world and that as a result, more reliable collections of data have become available to test the Clark-Fisher-Petty thesis.¹³⁰

¹²⁷P. T. Bauer and Basil Yamey, "Economic Progress and Occupational Distribution," p. 743.

¹²⁸Richard D. Holton, "Marketing Structure and Economic Development," pp. 347-348.

¹²⁹A. L. Minkes, "Statistical Evidence and the Concept of Tertiary Industry," pp. 366-373.

¹³⁰Lee E. Preston, "The Commercial Sector and Economic Development," Markets and Marketing in Developing Economies, p. 10.

Recent Empirical Test of the
Clark-Fisher-Petty Theory

Several empirical tests have been made of the Clark-Fisher-Petty thesis with conflicting results. Reed Moyer found that:

. . . in the United States, a per capita increase of \$100 in GNP (deflated for price changes) has been associated with an increase of 1.13 percent in the percentage of the labor force engaged in distribution. In the United Kingdom, increases of 10 pounds in real net national income per capita have been associated with increases of 1.63 percent in the share of the labor force employed in commerce and finance.¹³¹

Moyer also examined labor force structural changes with respect to GDP in thirty-two countries on a cross-sectional basis and found that:

. . . Dividing the countries into those with high and low incomes and into those with relatively fast and relatively slow growth rates uncovered no apparent relationships between these factors and the direction of change in the relative size of the trade sector.¹³²

A study of seventy-nine countries (three were eliminated because they were city states) conducted in 1968, provides mixed results of the relationship between economic growth and the share of the labor force allocated to commerce.¹³³ The study states specifically that ". . . on balance, it appears

¹³¹Reed Moyer, "Trade and Economic Progress: An International Comparison," The Journal of Business, Vol. 40, No. 3 (July 1967), pp. 272-273.

¹³²*Ibid.*, p. 277.

¹³³Lee E. Preston, "The Commercial Sector and Economic Development," Markets and Marketing in Developing Economies, pp. 14-16.

that the larger group of poor countries unquestionably have lower shares of their labor forces in commerce than do the intermediate and rich countries."¹³⁴

Another important statistical study of economic sector development conducted by Hollis Chenery in 1960 focused on the economic activity of 51 countries with a wide range of national income levels in 1950 or a nearby year. The per capita income of the countries in the study ranged from \$50 U.S. (Burma) to \$1,291 (Canada). Specifically, he found that ". . . The shift in the composition of production as one moves to higher levels of income among these countries probably corresponds roughly to the shift within each country as income rises over time."¹³⁵ As an example, calculated from his regression on income level and population size, the share of national income for manufacturing increased from 12 percent of the national income at a national income level of \$100 to 33 percent at a national income level of \$1,000. Likewise, the share of primary production declined from 45 percent to 15 percent at the above national income levels. The remaining share of national income is allocated to the tertiary sector as 57 percent at the \$100 national income level and 52 percent at the \$1,000 national income level.¹³⁶

¹³⁴Ibid., p. 17.

¹³⁵Everett E. Hagen, The Economics of Development (Homewood, Illinois: Richard D. Irwin, Inc., 1975), pp. 89, 90.

¹³⁶Ibid., p. 90.

Chenery's analysis indicates that ". . . the share of tertiary value added in national income, other than transportation and communications, rises very slowly between per capita income levels of \$100 and \$1,000, and the regression coefficient, though above unity, is not significantly different from unity at a 95 percent confidence level."¹³⁷

Hagen offers an explanation by pointing out that the tertiary sector includes two distinct types of services which he calls Tertiary A and Tertiary B. Tertiary A is personal services within the home, while Tertiary B is professional, recreational and other commercial services including government. He contends that Tertiary B continues to increase its share of national income and employment as per capita income rises. However, the services of Tertiary A become too expensive compared to Tertiary B and decline as per capita income rises. He reasons that the decline in employment and output in Tertiary A tends to mask the rise in Tertiary B when the two are combined. Therefore, at per capita incomes above \$1,000, the rapid rise in Tertiary B increases the total share of the tertiary sector in national income as a whole.¹³⁸

A 1960 study by Kuznets regarding the percentage of the labor force in the tertiary sector compared to GDP per capita for selected countries resulted in a wide variance. Countries in this study with per capita GDP of \$160 or less, which was the case of South Vietnam in 1960, ranged from a high of

¹³⁷Ibid., pp. 91, 92.

¹³⁸Ibid., p. 92.

36.8 percent of the labor force devoted to the tertiary sector in Ceylon to a low of 12.9 percent of the labor force devoted to the tertiary sector in Thailand. For countries included in this study, the average percentage of the labor force in the tertiary sector at the above income level was 23.5 percent.¹³⁹ The percent of the labor force devoted to the tertiary sector in South Vietnam during 1960 was 14.5 percent.¹⁴⁰

Marketing Development Structure

This study measured the strength of the relationship between the percent of the labor force devoted to the tertiary production sector and changes in the GNP (as described by Clark) in South Vietnam from 1955 through 1972. Linear, second-degree and third-degree curvilinear regression models were used to measure this relationship.¹⁴¹ A measure of the strength of the relationship between the percent of the labor force devoted to the commercial and marketing sub-sectors of the tertiary sector and changes in the GNP were made.¹⁴²

¹³⁹Ibid., p. 92.

¹⁴⁰See Appendix A, Table 36.

¹⁴¹Reed Moyer has pointed out that "a second-degree curvilinear regression model might provide a better fit since, as income rises, the percentage of the labor force devoted to distribution eventually must taper off (or turn down); otherwise, in time this sector would absorb the entire work force." See "Trade and Economic Progress: An International Comparison," The Journal of Business, p. 273. Also, it is possible that a third-degree curvilinear regression model may produce a better fit.

¹⁴²See Table 1, and Appendix A, Table 36.

Precise marketing development data concerning South Vietnam are available. Specific tests of the strength of the relationship between the percentage of the labor force devoted to the tertiary production sector, its commercial and marketing sub-sectors and changes in the contribution of this sector and sub-sectors to GDP, were conducted.¹⁴³

As mentioned earlier, the extension of this work beyond the traditional marketing development analysis was accomplished by measuring the strength of the relationship between accepted indicators of marketing development (sector labor force, GNP and GDP data) and indicators of political violence.¹⁴⁴ These three groups of measures of national

¹⁴³These tertiary sub-sector tests have been suggested by Moyer and Preston if the data would support it. See Reed Moyer, "Trade and Economic Progress: An International Comparison," The Journal of Business, pp. 272-273, Lee E. Preston, "The Commercial Sector and Economic Development," Markets and Marketing in Developing Economies, pp. 14-16.

¹⁴⁴See Appendix C, and Tables 43 and 44. Lamont has suggested that other economic and social indicators can be organized into a growth measure of marketing development. His measurement focused on the national households of Mexico and their ability to participate in marketing transactions. The measurement, called the propensity-to-participate, was a ratio of consumption (measured in minimum daily number of calories) plus minimum monthly income less the number of persons who did not possess the necessary language communications skills divided by the national population. He reasoned that marketing remained undeveloped if the propensity-to-participate was 10 percent or less and was developing if the ratio was 50 percent or more. This model would not be effective if applied to South Vietnam because of the consistently high per capita caloric consumption, and the essential statistics would require derivation from other data which are frequently questioned as to their accuracy. See Douglas Felix Lamont, "A Theory of Marketing Development: Mexico," (Ph.D. dissertation, The University of Alabama, 1964), p. 40.

marketing development were used to evaluate the major research question:

What was the impact of political violence on national marketing development in South Vietnam from 1955 through 1972?

This study went beyond the traditional evaluation of national marketing development. First, this study was of a single country over a long development period from 1955 through 1972 rather than of a group of countries or regions considered traditionally on a comparative basis utilizing one or a few points in their development periods. Secondly, the study dipped below the tertiary economic sector and considered the commercial and marketing sub-sectors of this major economic sector, which added precision to the study. Lastly, the development of marketing was evaluated with respect to the impact which political violence had on this development during three discernible political-economic periods. Each time period had different frequencies and intensities of political violence and different economic growth patterns.

The evaluation of the minor research questions relative to marketing operations, key agricultural commodity production and consumption patterns will be discussed in Chapter III.

CHAPTER III

STUDY DESIGN AND METHODOLOGY

General Method

The two major subjects of this dissertation, political violence and marketing development, are both measurable. The objective of this study was to measure the impact of political violence as represented by quantifiable indicators of political violence upon marketing development. Marketing development in this study was measured by quantifiable indicators of national income, employment, infrastructure performance, marketing institutional changes, agricultural production and changes in consumption patterns. This study was specifically focused upon the relationship between political violence and marketing development in South Vietnam from 1955 through 1972.

The obvious problem was to select valid empirical indicators of each. In recent years, many attempts have been made to improve the quality of empirical indicators of both political violence and marketing development. The indicators in use remain far from perfect. Therefore, decisions regarding which indicators to use in the measurement process were made. To guide these decisions, two criteria were established. First, the empirical indicator must be justifiable

on a theoretical basis as the indicator which will give the most satisfactory measure of the underlying concept.

Secondly, the indicator must have been successfully used in similar studies. Indicators in both areas were selected which were considered to meet both of these criteria.

Questions concerning the reliability and accuracy of the selected variables must be answered. In the case of South Vietnam, political violence and marketing development data were numerous both by source and scope. Therefore, a sorting out process was required. The two principles which guided this process were: selection of the data from sources as close to the primary collection agency as possible; and utilization of data sources which were widely accepted on a legal or institutional basis. The evaluation of reliability and accuracy involved numerous cross-checks of the data. In view of the aggregate data, the author is of the opinion that the above principles have considerable merit.

In order to make judgments about the truth of the research questions, a method for measuring the strength of the association between political violence and marketing development was required. A wide range of quantitative techniques was available to aid in this measurement.¹ Some of the more frequently used quantitative techniques for measuring the relationship between similar conditions are correlation, multiple regression, and factor analysis. The major

¹Samuel A. Kirkpatrick, Quantitative Analysis of Political Data (Columbus, Ohio: Charles E. Merrill Publishing Company, 1974), pp. 12-14.

statistical tool employed in this study, was multiple regression analysis. This technique was selected for this study because the test of each research question required quantifying the relationship between a single dependent (criterion) variable and one or more independent (predictor) variables. One author, experienced in marketing research, notes that ". . . because of their flexibility and ease of use, correlation and regression methods are relevant to a wide range of marketing research problems."²

There are few problems in marketing research, this study not expected, which involve only two variables. The major portion of the analysis in this study dealt with the association between an important criterion variable (dependent) and several independent variables. This study employed 8 indicators of national marketing and economic development, 14 indicators of marketing operations and infrastructure support, 4 indicators of key agricultural commodity production and 10 indicators of changing consumption patterns as dependent variables in four series of multiple regression models. The independent variables in these models were a cumulative political violence index and five basic political violence indicators. Dummy variables were injected into the series of regression models to test for shift parameters and slope changes during the three time periods of the study. The

²Henry J. Claycamp, "Correlation and Regression Methods," *Handbook of Marketing Research*, ed. Robert Ferber (New York: McGraw-Hill Book Company, 1974), p. 2-394.

large number of variables utilized, and the numerous combinations, required the selection of a flexible and easy to use method of data analysis.

The study design involved several steps. In the first step, a series of multiple regression models were constructed to measure the significance of the relationship between several indicators of sector employment as the dependent variable and several indicators of national income as the independent variables. In the second step, the indicators of sector employment and national income were the dependent variable in a series of multiple regression models in which the independent variables were the cumulative political violence index and the five basic political violence indicators. These models were used to measure the strength of the association between indicators of marketing development and the impact of political violence. The third step involved three series of multiple regression models which were constructed utilizing dependent variables of marketing infrastructure support and institutional changes, key agricultural commodity production and consumption pattern changes. The independent variables in this series were the cumulative political violence index and the five basic political violence indicators. This series of regression models provided a measure of the strength of the association between important marketing development indicators and the impact of political violence.

Each of the above series of regression models was computed for the full eighteen year development time period

utilizing annual data for political violence indicators.³

The three time periods of political violence were introduced into the series of regression models through the use of shift parameter and slope changes dummy variables. The purpose of this series was to measure institutional effects and structural changes which were attributable to the three time periods.⁴

Quantitative Techniques

The overall purpose of this study was to make a judgment about the relationship, if any, between marketing development and political violence in South Vietnam from 1955 through 1972. Several quantitative techniques were required in the analysis in support of this judgment. Descriptive statistical techniques were used to organize and display much of the data relative to marketing development and political violence. For example, tables were constructed to show selected indicators of marketing development and political violence. Histograms were developed to illustrate the changing frequency in the political violence indices. The result of multiple regression model computations were organized into tables for ease of reference. Lag structures which are

³In three data series, real quarterly marketing development data were available, in which case these data were used with quarterly political violence data in the regression models.

⁴J. Johnson, Econometric Methods, 2nd ed. (New York: McGraw Hill Book Company, 1972), pp. 176-186.

important to the study were plotted in chart form and contribute to the analysis of the study.

In addition to other descriptive statistical techniques cited above, the analysis of the research questions relied heavily upon powerful computer based multiple regression models. These models provided measures of the strength of the association between the dependent marketing development variables and independent political violence variables. The goals of this regression application were the same as those in most applications where sample statistics were not involved:

- (1) to obtain valid inferences about the nature of the causal or structural relationship between the variables in the population; and/or
- (2) to make accurate forecasts of the dependent variable.⁵

This study was primarily concerned with the former goal. In addition to selecting a flexible and easy to use technique, the primary consideration was to select a method which would permit an examination of the form and the degree of the association between marketing development and political violence. This method provided a basis for a logical and defensible judgment about this relationship.

The main concern in selecting a statistical technique was that it should contain a test of the strength of the association. There are several measures of the strength of results available from multiple regression analysis. Many

⁵Henry J. Claycamp, "Correlation and Regression Methods," Handbook of Marketing Research, ed., Robert Ferber (New York: McGraw-Hill Book Company, 1974), p. 2-403.

other forms of correlation analysis have been used in the study of political violence and economic development, such as factor analysis and discriminant analysis.⁶ These two methods are based upon orthogonal matrix rotation and extracting the most important roots from the explanatory matrix. Due to the volume of computations and manipulations involved, many of these techniques are "computer dependent." Seldom, if ever, will the same analysis produce the same results unless computed on the same computer employing the same computer software package. A more important deficiency of these programs is that many programs experience difficulties in estimating variances and parameters when these estimates are nonlinear in scope. Consequently, many of these techniques are seriously deficient in objective criteria from which a measure of significance can be used to determine the validity of parameter estimates of the model. As a substitute for such objective criteria, frequently very weak rationale such as R^2 and the F-ratio are used to test the model when the methodology does not permit significance test on estimated parameters which make up the model.⁷

The analysis conducted in this study was based largely on multiple linear regression analysis which is a commonly explained approach. Ordinary least squares (OLS), upon which multiple regression analysis is based, has many deficiencies

⁶Samuel A. Kirkpatrick, Quantitative Analysis of Political Data (Columbus, Ohio: Charles E. Merrill Publishing Company, 1974), pp. 15-85.

⁷Ibid.

relative to bias which is common in economic and political trend data. There are a host of criteria from which bias can be reported.⁸ The familiar T-test statistic was greatly relied upon in this analysis as a selection process which can best be explained as a backward step-wise process. The dependent variable was specified for each model along with all of the relevant independent variables. The model was then computed and the independent variables which did not have T-ratios which were significant at the 95 percent confidence level were excluded from the next computation of the model. This process was repeated until the best model was obtained. After each computation of a model, the matrix of simple correlations was examined to determine if there were conditions of simple multicollinearity. If this situation was present, the variables which were intercorrelated at a level of .80 or greater were excluded from the next computation of the model in the backward step-wise process.⁹

⁸For example we can examine regression residual plots of the dependent variable to determine if the homoscedasticity and linearity assumptions were violated in the model. Also the matrix of simple correlations will alert the researcher to the fact that there is multicollinearity--that is that two or more independent variables are correlated with one another. Methods for dealing with both of these conditions are proposed in the study.

⁹The presence of .80 or greater correlation between independent variables is considered serious and has been adapted as a threshold in this study. See, David S. Huang, Regression and Econometric Methods (New York: John Wiley & Sons, Inc., 1970), p. 154.

Multicollinearity

Multicollinearity is a continuous phenomenon whose severity is to be measured and is not a discrete condition that exists or does not exist. Kmenta has pointed out that:

Multicollinearity is a question of degree and not of kind. The meaningful distinction is not between the presence and absence of multicollinearity, but between its various degrees.¹⁰

An assumption of the classic OLS model is that none of the explanatory variables be perfectly correlated with any other explanatory variable or with any linear combination of other explanatory variables. If this assumption is violated, it is called perfect multicollinearity. If all explanatory variables are uncorrelated, there exists an absence of multicollinearity. The main concern in this study lies between these extremes in a high degree of multicollinearity. This condition is present when one explanatory variable is highly correlated with one or more other explanatory variables or linear combinations of these variables.¹¹

Multicollinearity is a sample rather than a population characteristic. Kmenta states that: "Since multicollinearity refers to the condition of the explanatory variables that are assumed to be nonstochastic, it is a feature of the sample and not of the population." In this study only population data was used. The sampling approach was used only to the extent that explanatory political violence variables were

¹⁰Jan Kmenta, Elements of Econometrics (New York: The Macmillan Company, 1971), p. 380.

¹¹Ibid.

selected based on their proven use in other studies.¹² If population data is used instead of sample data, Kmenta states that the underlying relation among stochastic explanatory variables should be specified in the model. This technique, to the extent possible, was followed in this study. For example, the cumulative political violence events index which was a function of the five basic political violence explanatory variables was not used in the same model with these variables. Deaths from political violence was a function of armed attacks and to a less extent of riots.¹³ These explanatory variables were excluded from the model in the backward step-wise regression process based on both their T-statistic and their contribution to R^2 . The matrix of simple correlations was examined to determine which variable or variables was highly collinear and should be excluded from the model.

In addition to excluding highly collinear variables from the model, another corrective action was re-specifying the model. This could be accomplished by substituting other explanatory variables for the highly collinear variables. This remedy could not be used because the data employed covers the entire population and was structured for the necessary time periods. The purpose of the research was to measure the impact of this particular set of political violence variables on marketing and related developments. Kmenta points out that if we have used up all the prior

¹²See Appendix C.

¹³See Appendix C.

information in specifying the model and have no new information, there would be little that we can do to correct for multicollinearity.¹⁴

It is possible that the reported models in this study could contain a high degree of multicollinearity between one explanatory variable and linear combinations of other explanatory variables. This condition was not specifically measured except in the backward step-wise regression process.

The main defense for using a backward step-wise process was that it included independent variables in the model based upon their significance reported in the "best fit" equation rather than maximization of the more commonly reported R^2 . The T-ratio statistic also allowed the researcher to establish confidence bands for those variables which should not be included in the model. Through proper utilization of the T-ratio statistic, the researcher impartially and with objective criteria tested for and postulated independent variables which should be included and excluded from each model in the backward step-wise procedure utilized in this study.

The Use of Significance

The use of the term significant in this study refers to reported statistics in the regression models which are within the establish confidence band limits. These limits were set at the .95 confidence level. The use of the term

¹⁴Jan Kmenta, Elements of Econometrics, p. 391.

"significant" in its strictest form refers to sample data. However, in this study which consists of only population data, the level of significance was used by the researcher to impartially and objectively select explanatory variables which should be included and excluded from each model. The significance level was used identically with the strength and potency of the association between each criterion variable and the selected explanatory variables.

In order to standardize the analysis and improve the common meaning of the terms used, the following general rules were employed in stating the findings of the regression analysis. The T-statistics and F-ratios which did not meet the .95 percent confidence level were termed "insignificant." Statistics which were reported at the .95 percent confidence level and slightly above were termed "significant." Statistics which had values of 2-3 times the required confidence level were termed "very significant." Statistics reported which were more than three times the required confidence level were termed "highly significant."

Methodology Questions

The major methodology question in this study was:

What is the rationale for separating the data in the study into three separate time periods of "pre-insurgency," "insurgency," and "limited war?"

The rationale for the three time periods based on changing marketing development and economic growth levels, along with the ever-changing frequency and magnitude of political

violence events, is presented in detail later in this chapter. The common statistical technique for testing the separation of data periods is the use of slope and intercept dummy variables in the regression models as independent variables.¹⁵ If the T-ratios on the slope dummy variables are insignificant, one may conclude there is a homogeneous structural relation in the examined years. However, if the T-ratios on the slope dummy variables are significantly different from zero, nonhomogeneity is suggested and provides a rationale for accepting data separation of the examined years. This approach allowed the researcher to determine if the dummy independent variables added something of significance to the explanation of the dependent variable.

Caution must be observed when using this approach. Many least square computer programs automatically supply an intercept by adding a vector of ones to the explanatory matrix. The use of dummy independent variables, requires that the regression model be run through the zero intercept to avoid multicollinearity.¹⁶

It may be interesting as well to see the changes in the level of significance in the explanatory variables with the inclusion of dummy variables in the model. Although R^2 is almost always greater when dummy variables are added to the model, these variables tend to reduce variable significance

¹⁵J. Johnston, *Econometric Methods* (New York: McGraw-Hill Book Company, 1972), pp. 176-192.

¹⁶*Ibid.*, pp. 178-179.

or marginal relationships which may tend to produce misspecification of model structures on the explanatory variables.¹⁷ In order to pass the T-ratio test of significance, only the most significant explanatory variables will be evident when dummy independent variables are included in the model. Other model evaluation criteria became evident when data separation was performed.

A second important methodology question resulting from the data analysis was:

What is the saturation or lag effect of the indicators of political violence on the marketing development, marketing operations, key agricultural commodity production and consumption pattern variables?

The use of lag techniques in the analysis of political violence was a relatively unexplored area. This researcher found no evidence of lag structures being used in empirical studies of political violence. Perhaps the reason was that it is often difficult and sometimes impossible to measure such lag effects.

One of the most rigorous approaches used to measure lag effects was postulated by Shirley Almon, commonly known as the Almon lag. Almon's basic theory is that a function which can be defined in a closed interval can be estimated over the entire interval by a polynomial of suitable degree. This approach is based upon selective criterion of the lag length and the degree of the polynomial.¹⁸ Since there was

¹⁷Ibid., p. 180.

¹⁸Ibid., pp. 294-300.

very little prior knowledge on some of the political violence variables included in this analysis, the Almon lag procedure required a selective approach to finding the most relevant lag structure. In this case, lag structures were computed for different degrees of polynomials and with varying lagged periods in order to identify the "best fit" structure as indicated by the significance of the T-ratio on the beta coefficients. Hopefully, a polynomial can be found at a fairly low degree with respect to the lag structures which channel political violence effects to dependent marketing development and other marketing operations variables. It was possible to picture the lag structure by plotting the normalized lag coefficients with respect to the lagged periods. Only the "best fit" models of a single dependent and independent variable were utilized to develop the lag structures reported due to the limitation of computer resources.

Computer Program

Most of the statistical processing and numerical calculations used in this research were performed on a generalized least squares computer software package called LEASTAT.¹⁹ One of the important features which this package has to offer is that it is currently running in a time sharing mode on one of the largest computer time sharing companies in the country, TYMSHARE Inc. The program package is running on an

¹⁹Leasco Response, Inc., Regression Statistics (LEASTAT), Software Computer Package in an IBM-360 Computer System.

IBM 360/65 programmed in call 360 basic language. Package dimensions are large enough to handle up to 1000 observations on 40 variables with an unlimited number of variable storage locations. Specifically, LEASTAT was developed as an econometric program package which is custom designed for analysis of data based on trends and time series. Consequently, many of the reported statistics generated from the package are aimed at finding serial correlation and reporting this information to the user.

LEASTAT uses a Rust et al. orthogonalization procedure for finding matrix inverse solutions to large ill-conditioned matrices.²⁰ All regression programs are usually based on finding inverse matrix solutions of the explanatory matrix and all are concerned with precision and rounding error when performing this task. The Rust procedure, developed by B. Rust at the Atomic Energy Commission, employs a basic GRAM-SCHMIDT normalizing process on rows and columns when taking an inverse.²¹ The main feature of the Rust algorithm is that loss of precision is reduced by performing a double normalization on rows and columns during calculations which attempt to find the indirect inverse for the matrix solution. His technique is installed in some of the larger regression

²⁰B. Allen, W. R. Burrus, and C. Schneeberger, "A Simple Algorithm for Computing a Generalized Inverse of a Matrix," Communication of ACM, Vol. 9, No. 5 (May, 1966), pp. 381-385, 387.

²¹Ibid., pp. 382-383.

packages at Universities of Michigan and Pittsburg, and is incorporated in LEASTAT.

LEASTAT automatically reports precision scaling and rounding error for each regression, a function which is not reported in most regression packages. In addition, the program has a wide range of optional lag schemes which are vital to this research.

Time Periods of Political Violence

South Vietnam was established as a separate governing entity on July 21, 1954.²² On January 23, 1973, a "cease-fire" agreement signed in Paris was reputed to call a halt to the fighting in South Vietnam. However, the fighting continued until the eventual Communist takeover of South Vietnam on April 30, 1975.²³ Between these two points in time the magnitude and frequency of destabilizing political events changed in South Vietnam. There were changes in economic and social conditions which are indicators of marketing development.²⁴ For purposes of analysis and comparison, this study

²²U. S., Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, March 1969, 91st Cong., 1st Sess., 1969, p. 2.

²³See, "Vietnam: The War That Won't Stop," Copley News Service, San Diego, California, February 3, 1974, p. 1, and "Saigon Under the V C Flag; Reds in Orderly Takeover," Pacific Stars and Stripes, Tokyo, May 2, 1975, p. 1, for details of the unexpected takeover of South Vietnam by the Communist opposition.

²⁴Reed Moyer, "Trade and Economic Progress: An International Comparison," The Journal of Business, Vol. 40 (July, 1967), p. 270.

identifies three major political violence periods during this time frame. These major periods have been identified based on the degree and frequency of destabilizing political events and significant changes in based economy and social indicators. It is, perhaps, more than coincidental that the major time periods which have been identified by political instability events and economic and social indicators of marketing development in South Vietnam were the same. A key element in testing the truth of each research question was to determine if political violence impacted differently on marketing development during the three time periods.

Pre-Insurgency Periods,
1955 Through 1960

There was considerable political turbulence associated with the establishment of the South Vietnamese government in 1954. The transfer of power from France to the new government was less than smooth, and there were armed revolts by political bandit groups which continued into 1955.²⁵ After this initial period of adjustment, the magnitude and frequency of political violence events declined beginning in early 1956 and continuing through mid-1959.²⁶ Both the frequency and magnitude of violent political events were low compared to the previous Indochina war years of 1945 through 1954 and

²⁵U. S. Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, pp. 2-4.

²⁶See Appendix C, Tables 43 and 44.

the later years of 1961 through 1972 with which this study was concerned.²⁷

Production and output increased in almost every sector of the economy during the period 1955 through 1960. Increases in the GNP averaged 3.8 percent per year during this period.²⁸

Several writers noted that guerrilla warfare and other acts of insurgency began to increase in magnitude and intensity during 1960. Musolf stated that ". . . indications of the likely course that public enterprise was to take were plain before guerrilla warfare began to become a major problem around 1960."²⁹ The United States Operations Mission (USOM) to South Vietnam stated that ". . . rural security conditions deteriorated seriously in 1960."³⁰ Also, ". . . the guerrillas have recently become successful in disrupting transportation in almost all parts of the country, and have seriously curtailed the flow of agricultural commodities to the Saigon market."³¹ In summary, a review of some key indicators of political violence shows the following: Protest Demonstrations, 1955 through 1960, 3; 1961

²⁷Ibid.

²⁸See Table 1.

²⁹Lloyd D. Musolf, "Public Enterprise and Development Perspectives in South Vietnam," Asian Survey, Vol. III, No. 8 (August 1963), p. 366.

³⁰U. S. Department of State, United States Operations Mission to Vietnam, Annual Statistical Bulletin, No. 7 (data through 1963) (Washington, D.C., 1964), p. xiv.

³¹James B. Hendry, "Economic Development Under Conditions of Guerrilla Warfare: The Case of Vietnam," Asian Survey, Vol. ii, No. 4 (June 1962), p. 9.

through 1964, 76; Government Sanctions, 1955 through 1960, 42; 1961 through 1964, 147; Riots, 1955 through 1960, 6; 1961 through 1964, 47; Armed Attacks, 1955 through 1960, 184; 1961 through 1964, 1,238; Deaths from Political Violence, 1955 through 1960, 4,706; 1961 through 1964, 20,892.³²

Insurgency Period,
1961 Through 1964

This period began with an increase in both the frequency and magnitude of political violence events in 1961 and ended with the introduction of large combat units into South Vietnam from the United States and other allies in early 1965. On January 29, 1961, Radio Hanoi praised establishment of the National Front for Liberation of South Vietnam (NFLSV), allegedly founded in December 1960.³³ The number of guerrillas as the instrument of violent political action for the NFLSV had increased to 20,000 armed men in 1961 and by 1962 there were an estimated 30,000 NFLSV forces in South Vietnam.³⁴ The tempo of political violence increased during 1962, and an estimated 1,700 South Vietnamese civilians were assassinated by the Viet Cong, frequently with unimaginable barbarism, and 9,688 were kidnaped.³⁵ The NFLSV extended its

³²See Appendix C and Tables 43 and 44.

³³U. S. Congress, Senate Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, p. 7.

³⁴U. S. Congress, Senate, Republican Policy Committee Report--The War in Vietnam, April 1967, 90th Cong., 1st sess., 1967, p. S6576.

³⁵Ibid., p. S6577.

control over much of South Vietnam during this period, and by June of 1963, the NFLSV was able to levy taxes in forty-one of South Vietnam's forty-four provinces.³⁶

The Diem government, which had come to power in 1954, was overthrown by a military junta on, November 1, 1963, and Diem and his brother, Mr. Nhu, were assassinated on, November 2, 1963.³⁷ As one writer indicates, this event gave rise to a period of ". . . continuing instability in the government of South Vietnam." He points out that there were six governments in South Vietnam from 1960 through 1964 with one of them lasting as little as nineteen days.³⁸

In the early fall of 1964, the character of political violence in South Vietnam began to change. By July, 1964, the U.S. military advisory mission in South Vietnam had grown to 23,000 men and during the winter of 1964 the South Vietnamese army had dwindled to slightly over 200,000 men, largely as a result of desertions.³⁹ It was discovered that the "Strategic Hamlet" program, which was designed to secure the rural population, was a crushing failure in view of the fact that most of these hamlets were really controlled secretly

³⁶Ibid., p. S6577.

³⁷Ibid., p. S6578.

³⁸Milton Sacks, "Restructuring Government in South Vietnam," Asian Survey, Vol. VII, No. 8 (August 1967), p. 518.

³⁹U. S. Congress, Senate, Republican Policy Committee Report--The War in Vietnam, p. S6579.

by the NFLSV (Viet Cong).⁴⁰ The Gulf of Tonkin resolution was passed by Congress. Before passage of the resolution, there was considerable debate over Section 2 which was not clear in its delegation of congressional power. Leaders in both the House and the Senate agreed that it would permit the President to introduce ground troupes into South Vietnam.⁴¹

In summary, some key figures regarding the "insurgency" period are worth noting. Troop strength at the end of 1964 was: American, 23,000; Army of the Republic of Vietnam (ARVN), 559,500; Viet Cong, 103,000. Casualties (killed, cumulative since 1960) at the end of 1964 were: American, 147; ARVN, 7,500; Enemy, 16,785. Casualties (wounded and noncombat dead) at the end of 1964 were: American, 1,039. Also at the end of 1964, enemy captures were 4,200 and enemy defections were 11,000.⁴² As pointed out in the discussion of the "pre-insurgency" period, the intensity and frequency of destabilizing violent events such as demonstrations, government sanctions, riots, armed attacks and deaths from political violence greatly increased during the "insurgency" period.⁴³

Economic performance during this period was very erratic. Expenditures on GNP increased at an annual average

⁴⁰Ibid., p. S6579.

⁴¹Ibid.

⁴²Ibid., p. S6585.

⁴³See Appendix C, Tables 43 and 44.

rate of 5.0 percent. However, there was a negative growth of -.8 percent from 1960 to 1961. Two inordinately high growth years were 1962 to 1963, and 1963 to 1964, when the increase was as much as 10.1 percent.⁴⁴

Agricultural outputs continued to increase over most of this period in spite of the increased tempo in the insurgency. Paddy (rice) production increased by 12.5 percent from 1961 to 1964.⁴⁵ Rubber production declined by 5.0 percent during this period.⁴⁶ The secondary and tertiary economic sectors continued to experience moderate growth during this period.⁴⁷

Limited War Period,
1965 Through 1972

The limited war situation in South Vietnam began to build up when ". . . on February 7, 1965, eight Americans were killed, 62 wounded in guerrilla attack by the Viet Cong."⁴⁸ A U.S. Senate report points out that:

. . . During this period the military situation in South Vietnam was deteriorating badly. Vietnamese army units were being defeated daily; the Vietnamese army was losing a battalion a week; district capitals were falling weekly; village strong-points were being overrun nightly.⁴⁹

⁴⁴See Table 1.

⁴⁵See Table 3.

⁴⁶Ibid.

⁴⁷See Table 2.

⁴⁸U. S. Congress, Senate, Republican Policy Committee Report--The War in Vietnam, p. S6582.

⁴⁹Ibid.

American military strength in South Vietnam continued to climb during this period. By the end of 1965 there were over 200,000 U.S. ground troops in South Vietnam.

By spring of 1967, the United States had committed 500,000 men to a land war in Asia. . . . Yet at the beginning of April 1967, the United States and the South Vietnamese were able to claim control over fewer villages and hamlets than in 1962.⁵⁰

At the peak of the United States commitment to the war in South Vietnam during mid-1969, there were over 550,000 U.S. forces in South Vietnam.⁵¹

The 1968 Tet offensive was a high point of political violence in South Vietnam. The changes after this offensive which resulted in a short period of reduced instability are particularly important to this study. One writer states:

. . . But the Vietnamese are a supremely pragmatic people--they worked on the evidence of their eyes. There were no more Communist attacks. Commerce began to flow; the highways and the waterways, built up as a military infrastructure for the insurgency, now became a network for trade. Saigon had found the key to counterinsurgency--commerce.⁵²

Major political violence continued from 1969 through 1970 but at a lower level than the 1966 through 1968 period.⁵³ The Cambodian offensive in 1970 and the preparation for a

⁵⁰Ibid.

⁵¹U S., Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam, p. 65.

⁵²Brigadier F. P. Serong, "The 1972 Easter Offensive," Southeast Asian Perspectives, No. 10 (Summer, 1974), p. 16.

⁵³See Appendix C, Tables 43 and 44.

presidential election in 1971 again increased the levels of political instability.⁵⁴

The last major destabilizing series of events during the period of this study, began on March 31, 1972, (the 1972 Easter Offensive), when ". . . three divisions with supporting tanks and artillery crossed the demilitarized zone (DMZ). This was clearly no local raid; it was a major assault--an operation of strategic dimensions."⁵⁵ It is estimated that the Easter Offensive had cost the North Vietnamese Army (NVA) more than 100,000 dead with about 30,000 dead ARVN.⁵⁶

Security in the countryside declined during and after the Easter Offensive in 1972. The offensive was accompanied by record levels of terrorism. Many young people were abducted by the enemy. The population under government control declined from 83 percent to 70 percent, and the contested population increased to 20 percent with the remaining 10 percent clearly under the control of the enemy. In addition, there were over 750,000 new refugees generated by this offensive.⁵⁷ All indicators of political violence were again increasing in both intensity and frequency.

⁵⁴Brigadiar F. P. Serong, "The 1972 Easter Offensive," p. 18.

⁵⁵Ibid., p. 21.

⁵⁶Ibid., p. 62.

⁵⁷Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 391.

Economic progress was exceedingly turbulent during this period. The average annual growth rate of the GNP declined to 2.5 percent from 1965 through 1972. During this period, there were negative growth years from 1967 to 1968, and 1971 to 1972, and one large positive growth year from 1969 to 1970.⁵⁸ Paddy (rice) production increased by 31.6 percent during the limited war, but because of population gains and other factors, South Vietnam continued to be a net rice importer.⁵⁹ Rubber production declined by 19.1 percent during the period.⁶⁰ Conversely, general industrial production increased during the period. As an indicator, the industrial production index increased 80.5 points during the period.⁶¹ The tertiary economic sector continued to grow over-all, particularly in public administration and defense, construction and services.⁶²

A supportable case can be made that the time periods which are used in this analysis are appropriately based on changes in the frequency and intensity of political violence events and changes in the levels of economic activity and progress.

⁵⁸See Table 1.

⁵⁹See Table 3.

⁶⁰Ibid.

⁶¹See Table 4.

⁶²See Table 2.

Measurement of Political Violence

The political instability of nations is reflected in conflict behavior both within and among nations. This study was concerned with political violence, which is denoted by internal conflict behavior, consisting of such events as demonstrations, riots, coups d' etat, guerrilla warfare and other violent events.⁶³ In addition to events of political violence, the internal political stability of a government is reflected in the political structure and its performance.⁶⁴ These dimensions of the total political process along with conflict behavior among nations are outside the scope of this study. Internal "political violence" is a concept which can be interpreted in more than one way. The theoretical notion of internal political conflict is also frequently referred to as "political aggression" or "civil strife."⁶⁵ In this study, the meaning of political violence

⁶³Ivo K. Feierabend and Rosalind L. Feierabend, "Aggressive Behavior Within Polities, 1948-1962: A Cross-National Study," The Journal of Conflict Resolution, Vol. X, No. 3 (September, 1966), p. 249.

⁶⁴Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven, Connecticut: Yale University Press, 1972), p. 14.

⁶⁵Several terms have been used to denote internal conflict behavior. The most widely used of these terms is "political instability." See Anger, Violence and Politics: Theories and Research, eds. Ivo K. Feierabend, Rosalind L. Feierabend, and Ted Robert Gurr (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 121, and Ivo K. Feierabend and Rosalind L. Feierabend, "Aggressive Behavior Within Polities, 1948-1962: A Cross-National Study," p. 249.

was restricted to "aggressive, politically relevant behavior."⁶⁶ The major task of this study was to measure the impact of aggressive political behavior upon marketing development in South Vietnam from 1955 through 1972. The impact of this political behavior was measured and evaluated through the use of a variety of techniques.

There are a wide range of possibilities for measuring political violence in a country. The selection of a unit of measurement is central to the concept of measuring.⁶⁷ Most writers have attempted the measurement of political violence by abstracting relevant and common dimensions in the form of events of political violence.⁶⁸ Predominantly, the unit for measuring political violence has been the "event" which is defined as "an occurrence or noteworthy happening."⁶⁹ The event has been selected as a unit of measurement because it is suitable for discovering quantitative relationships in political violence.⁷⁰ The event as a unit of measurement

⁶⁶A definition of "political instability" was given in Chapter I, from which this definition of "political violence" is adapted. See Ivo K. Feierabend and Rosalind L. Feierabend, p. 250. However, Taylor and Hudson prefer to refer to political violence events as indicators of "political protest." Also, see Charles Lewis Taylor and Michael C. Hudson, pp. 62-63.

⁶⁷William J. Goode and Paul K. Hatt, Methods in Social Research (New York: McGraw-Hill Book Company, Inc., 1952), p. 234.

⁶⁸Charles Lewis Taylor and Michael C. Hudson, p. 60 and Ivo K. Feierabend and Rosalind L. Feierabend, p. 249.

⁶⁹Taylor and Hudson, p. 60.

⁷⁰Ibid.

has been widely used in the field of political science. For example, Lasswell states that:

. . . The subject of political science (may be expressed) in terms of a certain class of events (including subjective events), rather than timeless institutions or political patterns. We deal with power as a process in time. . . . The developmental standpoint is concerned, not with systems in equilibrium, but with patterns of succession of events. . . .⁷¹

The event unit, in most cases, is not precise but is a report which is judged important enough by a journalist or editor to merit reporting in news media.⁷² An event has bounds in both time and space. The preparation for an event such as a coup d' etat may have taken months but the event is over in a few hours. Demonstrations and riots may begin and end within a few hours, and the armed attack may take only a few minutes. Some of these events may continue to be reported for days, and are appropriately weighted for quantitative analysis. Therefore, events then become comparable in terms of duration and longevity. The event as a unit of measurement should be thought of as a discrete social process which begins and ends within a period of time and is restricted to prescribed geographic limits.⁷³

The event techniques, which are used to measure political aggressive behavior in countries, are incorporated in

⁷¹Harold D. Lasswell and Abraham Kaplan, Power and Society: A Framework for Political Inquiry (New Haven, Connecticut: Yale University Press, 1950).

⁷²Taylor and Hudson, p. 61.

⁷³Ibid., pp. 60-61.

a systematic and orderly process. This process is initiated by recording the ". . . country in which it (the event) occurs, date, persons involved, presence or absence of violence, and other pertinent characteristics."⁷⁴ These collective facts constitute an event report. The sources of these event reports are news media and indices which are covered in more detail in Appendix C. The event reports are then identified based on a concise description.⁷⁵ Next, the event reports are grouped or classified based on a set of predetermined rules.⁷⁶ The classified events are recorded by type and time period for each country.⁷⁷

The events which represent political violence have been collected, described, identified, classified and organized in a variety of ways by different authors.⁷⁸ In all cases, political events have been operationalized in an effort to measure political violence or to search for the correlates of internal conflict. Some violence archivists report cumulative incidents of strife as single events, while

⁷⁴Ivo K. Feierabend and Rosalind L. Feierabend, Aggressive Behavior Within Politics, 1948-1962: A Cross-National Study, The Journal of Conflict Resolution, Vol. X, No. 3 (September 1966), p. 251.

⁷⁵See Appendix C.

⁷⁶See Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven, Connecticut: Yale University Press, 1972), pp. 442-423, and Appendix C.

⁷⁷Appendix C, Tables 43 and 44.

⁷⁸Ivo K. Feierabend and Rosalind L. Feierabend, p. 250.

others separate political violence into separate independent events.⁷⁹ The event time periods may be very long by simply recording the presence or absence of events such as guerrilla warfare.⁸⁰ There are numerous descriptions for political violence events which also influence their classification.⁸¹ Likewise, there are several major archivists who have organized and recorded political violence events in different ways.⁸²

The use of political violence events data, in the study of political violence and related social change and development, has not been on common ground. For example, the number and classification of political violence events are not common to all studies. Eckstein identified thirteen measures of conflict behavior and provided operation

⁷⁹For example, all European-OAS terrorism in Algeria was treated as a single event by Ted Gurr, "A Causal Model of Civil Strife," American Political Science Review, Vol. 62 (December 1968), pp. 1104-1124.

⁸⁰R. J. Rummel, "Dimensions of Conflict Behavior Within Nations, 1946-59," The Journal of Conflict Resolution, Vol. X, No. 1 (March 1966), pp. 66-73.

⁸¹The Title and description of political violence events used in this study are contained in Appendix C. A description of Eckstein's thirteen measures of conflict behavior are contained in R. J. Rummel, "Dimensions of Conflict Behavior Within Nations, 1946-59," pp. 71-72. Definitions of the nine conflict behavior measures used by Rummel and Tanter are found in Raymond Tanter, "Dimensions of Conflict Behavior Within and Between Nations, 1958-60," The Journal of Conflict Resolution, Vol. X, No. 1 (March 1966), Appendix 1, p. 6. The thirty political instability indicators developed by Hoole and used by the Feierabends are listed in Ivo K. Feierabend and Rosalind L. Feierabend, p. 255, and full descriptions are available through the Inter-University Consortium for Political Research, Ann Arbor, Michigan.

definitions for each measure.⁸³ Rummel developed and used, along with Tanter, nine measures of conflict behavior to evaluate such behavior within and between nations.⁸⁴ The Feierabends used Hoole's thirty political instability variables collected over the period 1948 through 1962 in their study of aggressive behaviors within polities.⁸⁵ In a study of patterns of political violence, Flanigan and Fogelman used seven categories of domestic political violence.⁸⁶ Nesvold employed twelve violence indicators to develop an empirical scale of political violence.⁸⁷ Tanter and Midlarsky relied upon two indicators in their study: the number of people killed in domestic violence; and the number of revolutions. Russett used three types of measures: the turnover ratio in top office-holders; the number of people killed in domestic violence; and the thirteen indicators of political

⁸³R. J. Rummel, "Dimensions of Conflict Behavior Within Nations, 1946-59," pp. 71-72.

⁸⁴Raymond Tanter, "Dimensions of Conflict Behavior Within and Between Nations, 1958-60," p. 62.

⁸⁵Ivo K. Feierabend and Rosalind L. Feierabend, p. 255.

⁸⁶William H. Flanigan and Edwin Fogelman, "Patterns of Political Violence in Comparative Historical Perspective," Comparative Politics, Vol. 3, No. 1 (October 1970), p. 5.

⁸⁷Betty A. Nesvold, "Scalogram Analysis of Political Violence," Comparative Political Studies, Vol. 2, No. 2 (July 1969), p. 175.

⁸⁸Raymond Tanter and Manus Midlarsky, "A Theory of Revolution," Journal of Conflict Revolution, Vol. XI, No. 3 (September 1967), p. 270.

violence specified by Eckstein.⁸⁹ This study selected five basic indicators to denote political violence. Operations definitions are cited for these indicators in Appendix C.

Some writers have taken the process of classifying and organizing political violence variables one step further by attempting to get at the underlying dimensions of political events data through factor analysis.⁹⁰ The stated purpose of this additional step was ". . . to reduce a large number of phenomena to major patterns of co-variation--to suggest labels by which such phenomena can be parsimoniously conceptualized, and to provide handles by which they might be analyzed and manipulated."⁹¹ For example, Rummel found in a study of domestic and foreign conflict data that his nine measures of domestic conflict for the years 1955 through 1957 had three underlying dimensions, which he called "turmoil," "revolution" and "subversion."⁹² Raymond Tanter, using the same nine measures for 1958 through 1960, only found two factors which he called "turmoil" and "internal war."⁹³ Building upon the work of Rummel and Tanter, Ted Gurr

⁸⁹ Anger, Violence, and Politics: Theories and Research, eds. Ivo K. Feierabend, Rosalind L. Feierabend, and Ted Robert Gurr, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 121.

⁹⁰ R. J. Rummel, "Dimensions of Conflict Behavior Within Nations, 1946-59," p. 65.

⁹¹ Ibid., p. 65.

⁹² Ibid., p. 68.

⁹³ Raymond Tanter, "Dimensions of Conflict Behavior Within and Between Nations, 1958-60," pp. 49-50.

developed a three-fold typology of civil strife⁹⁴ which he called "turmoil," "conspiracy" and "internal war."⁹⁵ Hoole also factor analyzed his thirty variables of political instability and obtained five major and five minor factors. The five major factors were labeled: "demonstrations," "change of office holder," "riots," "guerrilla warfare" and "strikes,"⁹⁶ Utilizing Hoole's same thirty variables, Feierabend, Feierabend and Litell performed a factor analysis from which nine factors emerged. These nine factors were further grouped under three dimensions which they called: "... first, a turmoil dimension (characterized by violence and mass participation); second, a palace-revolution-revolt dimension (distinguished by a marked lack of mass support); and third, a power-struggle-purge dimension (connoting violent upheavals and changes of office within regimes)."⁹⁷ The purpose of this step in each study was to reduce the large number of observed variables to a smaller number of underlying dimensions.

As a last step in the measurement of political violence, a simple frequency count of events may be taken for each time

⁹⁴Civil Strife is defined by Gurr as "all collective, non-governmental attacks on persons or property that occur within the boundaries of an autonomous or colonial political unit." Ted Gurr, "A Causal Model of Civil Strife: A Comparative Analysis Using New Indices," p. 1107.

⁹⁵Ibid., p. 1108.

⁹⁶Ivo K. Feierabend and Rosalind L. Feierabend, pp. 255-256.

⁹⁷Ibid., p. 256.

period under study as a method of ordering internal conflict behavior.⁹⁸ Total frequency of all destabilizing events can be grouped together to form a political violence index for the time period. Separate and collective events reflecting political violence can be grouped and summed to form indices of different classes of conflict behavior.⁹⁹ Another approach is to construct scales which take into account the intensity of the events.¹⁰⁰ Events are ordered into the scale by several techniques, of which the most widely used is consensual judgment. This step in the measurement process gives consideration to the type of political violence event, its persistence and pervasiveness, which are all weighted.¹⁰¹ The weighted events may be incorporated into an index of political instability or separate indices may be constructed for distinct types of conflict.¹⁰²

⁹⁸Ibid., pp. 252-253.

⁹⁹Ibid., pp. 253-254.

¹⁰⁰Many scales have been developed and used to weight political violence events data for comparative purposes in cross-polity studies. See Betty A. Nesvold, "Scalogram Analysis of Political Violence," pp. 172-194, Ivo K. Feierabend and Rosalind L. Feierabend, "Aggressive Behaviors Within Polities, 1948-1962: A Cross-National Study," pp. 251-256, and Anger, Violence, and Politics: Theories and Research, p. 121.

¹⁰¹Ted Gurr, "A Causal Model of Civil Strife: A Comparative Analysis Using New Indices," p. 1108.

¹⁰²An example of weighted stability scores is contained in Ivo K. Feierabend and Rosalind L. Feierabend, pp. 252-253.

Selection of Political Violence Variables

A major goal of this study was to measure the impact of political violence on the development of marketing in South Vietnam from 1955 through 1972. In order to perform this measurement, five basic comparable political violence indicators were selected.¹⁰³ These indicators are considered to be representative of a wide range of political violence and protest. Each variable was designed to represent distinct types of violence and coercion.¹⁰⁴ The archivist of these indicators stated that:

Our intent has been to provide a typology of protest behavior on a figurative spectrum of intensity, ranging from the relatively normal and legitimate demonstration, which is essentially nonviolent, to the comparatively subversive or revolutionary violence of the armed attack, which in one of its most typical forms involves the bombing of government facilities.¹⁰⁵

The archivists point out that they have developed a wide variety of indicators of different kinds of protest. They have made no attempt to evaluate these indicators but left this option open to the researcher.¹⁰⁶ They suggested that

¹⁰³Political violence indicators are used to portray quantities and change for the purpose of comparative analysis. As illustrated earlier in this chapter, violent events are comparable and have aggregate analytic utility similar to aggregate GNP in economic analysis. See Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators (New Haven, Connecticut: Yale University Press, 1972), p. 59.

¹⁰⁴*Ibid.*, p. 62.

¹⁰⁵*Ibid.*, p. 63.

¹⁰⁶*Ibid.*, p. 60.

the five basic indicators of political violence for this study fall into several categories.

The five civil strife indicators that follow are reports of peaceful protest by the ruled (protest demonstrations), anomic action by the ruled (riots), organized violent action by the ruled (armed attacks and political deaths), coercive action by the rulers (governmental sanctions.)¹⁰⁷

The terms and definitions for the five basic indicators of political violence are provided in Appendix C, "Properties of Political Violence Events: Variables." Also, included in Appendix C are coding rules, an amplification of the political violence definitions and statistical characteristics of the political violence events data.

A sixth indicator of political violence was generated by cumulating the five basic political violence events data in each time period (annual and quarterly) into indices. These indices are overall indicators of both the frequency and intensity of political violence present in South Vietnam during three time periods. This indicator of political violence is called the Cumulative Political Violence Events Index.¹⁰⁸

The political violence variables adopted for this study have found wide use in similar studies which purport to measure different aspects of economic, social and political development. The thirty indicators of political instability developed by Hoole and used by the Feierabends and others

¹⁰⁷ Ibid., p. 64.

¹⁰⁸ See Appendix C and Tables 43 and 44.

included demonstrations, riots, repressive actions (government sanctions), terrorism, sabotage, guerrilla warfare and civil war, and revolts.¹⁰⁹ The thirteen indicators of political violence developed by Eckstein and used by others, included warfare, rioting, terrorism and turmoil as violence indicators. Summary indicators of political violence included the total number of incidents of unequivocal violence, extended violence, and the sum of unequivocal and equivocal violence.¹¹⁰ The nine measures of conflict behavior developed by Rummel included the following violence dimensions: riots, demonstrations, assassinations, strikes, guerrilla warfare, revolutions, government crises and number of people killed in all forms of domestic violence.¹¹¹ The Nesvold scale of political violence included riots, demonstrations, revolts, guerrilla warfare, assassinations, civil war and government actions against specific groups, among others.¹¹² Flanigan

¹⁰⁹Ivo K. Feierabend and Rosalind L. Feierabend, p. 255.

¹¹⁰R. J. Rummel, "Dimensions of Conflict Behavior Within Nations, 1946-59," The Journal of Conflict Resolution, Vol. X, No. 1 (March 1966), pp. 71-72.

¹¹¹Raymond Tanter, "Dimensions of Conflict Behavior Within and Between Nations, 1958-60," The Journal of Conflict Resolution, Vol. X, No. 1 (March 1966), p. 62.

¹¹²Betty A. Nesvold, "Scalogram Analysis of Political Violence," Comparative Political Studies, Vol. 2, No. 2 (July 1969), p. 175.

and Fogelman included riots, rebellion and civil war in their list of domestic political violence indicators.¹¹³

Many writers have attempted to reduce a large number of political violence phenomena to major patterns through factor analysis. Some writers have focused on a very limited number of political violence indicators which they consider to be representative of the spectrum of political violence. Russett used this approach in his study of inequality and instability, which employed only three indicators of political data. The indicators were "personnel instability," which was the term of office of the chief executive, "Eckstein Internal War," which was the total number of violent incidents, and "Deaths From Civil Group Violence."¹¹⁴ Further, some studies utilized gross indices of political instability which have been developed from a wide variety of political violence indicators.¹¹⁵

The indicators, which have been used to measure political violence in other studies, differ both in number and scope. Given this wide range of substantive content, the

¹¹³William H. Flanigan and Edwin Fogelman, "Patterns of Political Violence in Comparative Historical Perspective," Comparative Politics, Vol. 3, No. 1 (October 1970), p. 5.

¹¹⁴Bruce M. Russett, "Inequality and Instability: The Relation of Land Tenure to Politics," cited in Anger, Violence and Politics, Theories and Research, eds. Ivo K. Feierabend, Rosalind L. Feierabend, and Ted Robert Gurr (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), pp. 129-132.

¹¹⁵Ivo K. Feierabend and Rosalind L. Feierabend, "Study 6: A Multiple-Factor Explanation of Political Instability and External Conflict," cited in Ibid., pp. 174-176.

resulting measures have been different. However, the indicators of political violence, which have been used in similar studies to measure the underlying dimension of political violence, are strikingly similar to the indicators selected for this study. They differ in that they represent in some cases a more precise categorization of political violence, and in some cases the categories are less restrictive than those selected for this study. Some refinement of the events selected for this study have been accounted for in the codification process.¹¹⁶ For these reasons, the indicators selected for this study are considered by the writer to reflect the best observational meaning of political violence. It is recognized that these five basic indicators of political violence and the cumulative political violence events indices are not all inclusive measures of political violence, as that was not intended. They are adequate for the task to which they have been applied in the measurement of political violence.

Measurement of Marketing Development
and Marketing Operations

Gross indicators have been utilized in the measurement of marketing development and marketing operations in the less-developed countries because of a lack of more

¹¹⁶See Appendix C.

specific indicators.¹¹⁷ National economic development in general has been measured in two ways: first, utilizing a measurement over time of the increase in capital stock accumulated in a country; and second, computing the changes in per capita national income.¹¹⁸ If we wish to analyze development below the national level, a third measurement has been found most useful. This measure is the percent of the labor force employed in marketing in a country.¹¹⁹ The more sophisticated measures of marketing development are made through national income models. These sophisticated measures were not possible in the less-developed countries such as South Vietnam for two principal reasons. The relationship between economic sectors has not been identified, and the required consumption, production and investment data

¹¹⁷In many cases only gross estimates of national accounts, employment, investment, consumption, savings and capital accumulation are available in the less-developed countries. For a complete discussion of the difficulties associated with measuring national income and capital in the less-developed countries, see Peter T. Bauer and Basil S. Yamey, The Economics of Under-Developed Countries (Chicago: The University of Chicago Press, 1956), pp. 16-29.

¹¹⁸Ibid.

¹¹⁹Data on economic sector employment have been collected by Clark, Barger, Moyer and Preston. These data have been used to test the general hypothesis that increases in per capita income are associated with increases in the percentage of the total labor force engaged in distribution alone or in commerce and finance. See Reed Moyer, "Trade and Economic Progress: An International Comparison," The Journal of Business, Vol. 40, No. 3 (July 1967), p. 271 and pp. 270-279 for the entire article, and Lee E. Preston, "The Commercial Sector and Economic Development," in Reed Moyer and Stanley C. Hollander, eds., Markets and Marketing in Developing Economies (Homewood, Illinois: Richard D. Irwin, Inc., 1968), pp. 9-23.

was not complete or was not disaggregated by economic sector.¹²⁰

The measurement of marketing operations is also restricted due to a lack of data. Distribution census data are particularly weak or non-existent in most less-developed countries.¹²¹ In most cases data concerning the simple indicator of output per man hour for the commercial sub-sector or portions thereof are not available.¹²²

Marketing development studies have relied upon two general types of indicators to measure marketing development in the less-developed countries. These two indicators are occupational employment statistics and national income.

¹²⁰ National income accounts statistics based on the International Standard Industrial Classification (ISIC) were collected for South Vietnam beginning in 1960. In order to meet the needs of a sophisticated national income model which contained a distribution sector, data regarding inventory levels, labor productivity, price levels and strict accounting of all inputs and outputs with efficiency factors would be required. These detailed distribution sector data are not available for South Vietnam.

¹²¹ Four complete and two partial distribution censuses were taken for South Vietnam over the period of this study. See Appendix A.

¹²² Statistics are not available regarding the number of man-hours devoted to distribution; however, estimates of annual employment levels and contributions (on a value added basis) of the commercial sub-sector and the wholesale, retail trade sub-sector to the GDP are available. See Appendix A and Table 2.

statistics.¹²³ Both of these indicators can be refined to focus on different levels of economic activity within a country if the data will support the effort. For example, employment in the tertiary sector as a percent of total employment can be used, or this indicator can be refined by using only the employment in the commercial sub-sector or the trading portion of that sub-sector as a percent of total employment.¹²⁴ Likewise, national income data can be the GNP per capita computed on several bases,¹²⁵ or the GDP per capita computed on several bases can be used as a measure of growth and development. Frequently, GDP figures are available by economic sector and sub-sector. For example, the GDP which was contributed by the tertiary sector has been computed and disaggregated by elements of that sector.¹²⁶

¹²³Relatively few attempts have been made to measure marketing development directly. Changes in commercial and trade sector growth have been evaluated utilizing occupational employment and national income statistics. See Reed Moyer, "Trade and Economic Progress: An International Comparison," pp. 270-279. The historical stages approach has been utilized to explain marketing development but does not contain any mechanism for measurement. See Reed Moyer, Marketing in Economic Development, International Business Occasional Paper No. 1 (East Lansing, Michigan: Michigan State University, 1965), pp. 53-54.

¹²⁴Reed Moyer, "Trade and Economic Progress: An International Comparison," p. 274.

¹²⁵GNP figures computed at constant 1960 market prices for South Vietnam are displayed in Table 1. Expenditure on GNP at current market prices are available for most years of this study. See Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 271.

¹²⁶GDP figures based on current factor cost by economic sector origin are available for South Vietnam. See Table 2.

Both the occupational data and the national income data are subject to important questions with respect to relevance and accuracy. Gross Domestic Product (GDP) figures are considered by one writer to be more appropriate indicators of relative states of development than measures of real income.¹²⁷ Their accuracy is believed to be correlated with the level of development itself.¹²⁸ Likewise, occupational employment statistics suffer in the less-developed countries from a lack of accuracy. For our analytical purposes, the data can be viewed as correct within a reasonable range. The purpose is to show overall trends and changes in the development and operation of the marketing element of the economy.

Indicators of occupational employment and national income have been used in several ways to measure the development of marketing. These indicators can be used to measure trends over time in one country or to compare the progress of several countries on a cross-sectional basis.¹²⁹ First, the tertiary sector employment as a percent of the labor force can be used in a regression model as the dependent variable and the per capita GNP can be the independent variable. This allows one to forecast tertiary sector growth at

¹²⁷Lee E. Preston, "The Commercial Sector and Economic Development," p. 13.

¹²⁸The impact of the accuracy in South Vietnam is less severe than most less-developed countries due to the large technical and economic assistance program which aided their National Institute of Statistics.

¹²⁹Reed Moyer, "Trade and Economic Progress: An International Comparison," pp. 270-279.

different levels of per capita GNP. This measure can be computed for a single country over time or used to study the relationship at one moment of time for a number of countries at different stages of development. Second, the percent of the labor force devoted to the tertiary sector or sub-sector can be regressed as the dependent variable against the corresponding contributions to GDP as the independent variable. This is considered to be a more accurate method for forecasting sector growth at different levels of national income.¹³⁰

Marketing operations are customarily measured by the computation of output per man-hour in distribution.¹³¹ Data are not available for this measure in this study. However, the comparison of sector contribution to GDP with sector employment does provide a refined measure of distribution growth.

Selection of National Marketing Development Variables

National marketing growth and development has been measured by employing national economic accounts and employment statistics.¹³² These gross indicators have been utilized in the absence of more precise productivity,

¹³⁰ Ibid., pp. 277-279.

¹³¹ Ibid., p. 270.

¹³² Ibid., pp. 277-279.

efficiency and structural data.¹³³ This is particularly true of the less-developed countries which do not collect statistics regarding number of hours worked in various trades and professions, the productivity of workers and the contribution of economic sectors and sub-sectors to the national product.¹³⁴ The measurement of marketing development has been accomplished on a gross basis utilizing such indicators as the percent of the labor force to the tertiary sector and the per capita GNP.¹³⁵ Fortunately, more precise indicators of marketing development are available to measure this phenomenon in South Vietnam.¹³⁶

¹³³Ibid., p. 270.

¹³⁴Most writers on marketing development have pointed to the non-availability, incompleteness or inaccuracy of both distribution employment and national accounts statistics. This is alleged to be particularly true in the less-developed countries where few censuses of distribution and national income studies have been conducted. See Richard H. Holton, "Marketing Structure and Economic Development," The Quarterly Journal of Economics, Vol. LXVII, No. 3 (August 1953), p. 345, and Reed Moyer, "Trade and Economic Progress: An International Comparison," The Journal of Business, Vol. 40, No. 3 (July 1967). However, some writers have pointed out that these imperfect statistics of distribution employment and national income are useful and effective in the analysis of marketing development. See Reed Moyer, Marketing in Economic Development, International Business Occasional Paper No. 1 (East Lansing, Michigan: Michigan State University, 1965), p. 46, and Lee E. Preston, "The Commercial Sector and Economic Development," in Reed Moyer and Stanley C. Hollander, eds. Markets and Marketing in Developing Economies (Homewood, Illinois: Richard D. Irwin, Inc., 1968), p. 12.

¹³⁵Reed Moyer, "Trade and Economic Progress: An International Comparison," pp. 270-279. These data, used in this study, are in Appendix A, Table 44 and Table 1.

¹³⁶See Tables 1 and 2 and Appendix A, Table 36.

In order to evaluate the general development of the tertiary economic sector in South Vietnam from 1955 through 1972, the percent of the labor force employed in the tertiary sector as the dependent variable was regressed against the per capita GNP in constant prices.¹³⁷ The data was fitted to a linear regression model.¹³⁸ Also, second-degree and third-degree curvilinear regression models were tested to determine if a better fit could be obtained, because as incomes rise, the percent of the labor force devoted to the tertiary sector must taper off or turn down.¹³⁹ As a refinement, the GDP and the percent of GDP contributed by the tertiary sector were added as independent variables in a multiple regression model,¹⁴⁰ while retaining the percent of the labor force employed in the tertiary sector as the dependent variable.

Several refinements in the measurement of marketing development in South Vietnam were possible based on the data

¹³⁷These data are in Table 1 and Appendix A, Table 36.

¹³⁸The data was fitted to a linear regression model of the form $Y = a + bx$ using data for the period 1955 through 1972. Y is the percent of the labor force employed in the tertiary sector and x is the per capita GNP.

¹³⁹The second-degree curvilinear regression model is of the form $Y = a + bx + cx^2$. See Reed Moyer, "Trade and Economic Progress: An International Comparison," p. 273. A third-degree model was tested to determine if a better fit of the data could be obtained.

¹⁴⁰See Table 2 for GDP data. Multiple-regression models are used to analyze the association between an important criterion variable (dependent) and several independent variables. The model is of the general form $Y = a + b_{yx \cdot z} X = b_{yz \cdot x} Z$.

available for this task. The development of the commercial portion of the tertiary sector was evaluated by regressing the percent of the labor force employed in the commercial sub-sector¹⁴¹ as the dependent variable against the percent of GDP contributed by the commercial sub-sector.¹⁴² The commercial sector consists of wholesale and retail trade, banking and insurance and real estate.¹⁴³ It has been pointed out that these three categories ". . . coincide roughly with Clark's 'commerce' and 'finance' categories, respectively."¹⁴⁴ This analysis focuses on the specific contributions of commerce to the formation of GDP.

A further refinement in the assessment of marketing development was made by regressing the percent of the labor force employed in the wholesale and retail trade sub-sector as the dependent variable against the percent of GDP contributed by the wholesale and retail sub-sector.¹⁴⁵ This refinement reflected the relationship between increases or decreases in the contribution of the trade sub-sector to GDP and the percent of the labor force engaged in this sub-sector.

¹⁴¹See Appendix A, Table 36.

¹⁴²See Table 2.

¹⁴³As specified in the International Standard Industrial Classification (ISIC) system.

¹⁴⁴Reed Moyer, "Trade and Economic Progress: An International Comparison," p. 274.

¹⁴⁵See Appendix A, Table 36 and Table 2.

The purpose of this initial analysis of national marketing development was to place the tertiary sector, the commercial portion of that sector and the trading sub-sector in perspective regarding their roles in national economic growth and development. With a clear understanding of the results of traditional marketing development analysis, this study proceeded beyond the traditional efforts by measuring the impact of political violence on national marketing development.

The next step measured the association between indicators of national marketing development and political violence. All the indicators of national income and employment, namely, the per capita GNP, the GDP, percent of GDP contributed by the tertiary sector, percent of GDP contributed by the commercial sub-sector, percent of the GDP contributed by the wholesale and retail sub-sector, percent of the labor force employed in the tertiary sector, percent of the labor force employed in the commercial sub-sector and percent of the labor force employed in the wholesale and retail trade sub-sector were introduced alternately as dependent variables in a series of multiple regression models. The cumulative political violence events index and the five basic political violence variables were alternately the independent variables in these models.

The regression models were structured and computed for the eighteen year development period utilizing annual data. Slope and intercept dummy variables were used to measure the

impact of political violence on marketing development during each time period of "pre-insurgency," "insurgency" and "limited war." Lag structures were developed for both the conventional measures of marketing development and the measures of the impact of political violence on marketing development.

The purpose of this analysis was to aid in evaluating the major research question:

What was the impact of political violence on national marketing development in South Vietnam from 1955 through 1972?

Selection of Infrastructure Variables

There are numerous marketing functions which aid the development process.¹⁴⁶ Many of these functions extend beyond the basic exchange function of buying and selling. The facilitating functions of physical distribution all require and rely upon an infrastructure network of transportation systems, financial institutions, information media and utilities. Carson pointed out: "As marketing systems grow more complex, a number of specialized institutions frequently arise to facilitate the marketing operations."¹⁴⁷

From a measurement point of view, it would be advantageous if it were possible to group all data concerning

¹⁴⁶ A list of these functions as suggested by Reed Moyer, Marketing in Economic Development, pp. 12-13 are contained in Chapter II, p. 74.

¹⁴⁷ David Carson, International Marketing: A Comparative Systems Approach (New York: John Wiley and Sons, Inc., 1967), p. 381.

marketing and marketing operations activities. Preston pointed out that it would be ideal ". . . to group the data about marketing activities alone, excluding purely financial operations, and including those elements of agriculture, manufacturing, transport and storage associated directly with marketing."¹⁴⁸ The data on South Vietnam, similar to most developing countries, will not support the ideal analysis of marketing development suggested by Preston. The available data will support a measurement of the association between marketing infrastructure development and political violence.

A group of fourteen variables, which best represent the facilitating functions of marketing, marketing institutions and the general infrastructure supporting marketing operations, were selected for introduction into a series of multiple regression models as the dependent variable. The general index of industrial production and per capita electric energy production was introduced as dependent checking variables. Even though they are not part of the tertiary economic sector, they are closely associated with the essential infrastructure which supports marketing operations. Similar to the series of tests of the impact of political violence on national marketing development, the cumulative political violence events index and the five basic

¹⁴⁸Lee E. Preston, "The Commercial Sector and Economic Development," in Reed Moyer and Stanley C. Hollander, eds., Markets and Marketing in Developing Economies (Homewood, Illinois: Richard D. Irwin, Inc., 1968), p. 13.

indicators of political violence were alternately the independent variables in these regression models. The purpose of these models was twofold: to measure the strength of the association between the development of infrastructure systems in support of marketing operations and political violence; and to provide an additional test of the concept that ". . . to progress, economies must move, relatively, out of agriculture and into industry."¹⁴⁹

The development of an efficient and effective infrastructure consisting of transportation, communications and utilities is a basic requirement for the modernization of any country. The impact of political violence on the development and operation of the infrastructure in South Vietnam from 1955 through 1972 is debated. Some writers maintain that the net effect of political violence was to destroy or at least retard this development.¹⁵⁰ Other writers, however, maintain that political violence aided in some cases or redirected the development of the infrastructure.¹⁵¹ These opinions were reached in most cases without the benefit of empirical evidence. One purpose of this study was to clarify this point in general and to measure the impact of political

¹⁴⁹Ibid., p. 3.

¹⁵⁰See Chapter I and Joint Development Group, The Post-war Development of the Republic of Vietnam (New York: Praeger Publishers, 1970), pp. 344-395.

¹⁵¹See Chapter I and U.S. Library of Congress, Impact of the Vietnam War, prepared for the use of Committee on Foreign Relations, U.S. Senate, 92d Cong. 1st sess. (1971), pp. 1-34.

violence on the development of marketing supportive infrastructure, utilizing empirical evidence in a systematic manner.

The impact of political violence on the development and support of marketing and related activities was examined through an analysis of several variables. The performance of selected transportation systems was examined by selecting a variable from each of the four principal means of transportation for inclusion in the analysis. Transportation systems consist of equipment, facilities and people. It is not necessary to evaluate all of these indicators in order to detect significant growth and changes in a transportation system. In the motor transportation system, the number of motor vehicles in use was selected as the indicator. For the rail transportation network, railway passenger/kilometers was used as the indicator, and in the air transportation system, domestic air passenger/kilometers was the indicator. Due to the geographic characteristic of South Vietnam, which has a coastline of approximately 1,260 miles,¹⁵² coastwise shipping in commercial ports was used as an important transportation indicator. All four variables were included alternately as dependent variables in a series of multiple regression models.¹⁵³

¹⁵²Ann Caddell Crawford, Customs and Culture of Vietnam (Rutland, Vermont: Charles E. Tuttle Co., 1966), p. 175.

¹⁵³See Table 6.

Communications media development is often identified as a source of economic and political change.¹⁵⁴ A group of communications media variables were examined in a series of multiple regression models alternately as the dependent variable to measure their association with the previously specified indicators of political violence. Each variable reflected the development or changes in a communications media.¹⁵⁵ The postal system variable used was domestic air post letters received and mailed.¹⁵⁶ The printed news media was represented in the circulation of daily newspapers¹⁵⁷ and the electronic news media was represented by the average weekly radio broadcast hours.¹⁵⁸

Financial institutions support all business, private and government economic activity. They are particularly important for the support which they lend to marketing operations. As an indicator of this support and a barometer of general economic activity, the number of checks presented

¹⁵⁴Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven, Connecticut: Yale University Press, 1972), p. 206.

¹⁵⁵Numerous variables were available to assess communications in South Vietnam. However, the three variables selected were considered by the author to best represent each major media.

¹⁵⁶See Table 7.

¹⁵⁷Ibid.

¹⁵⁸Ibid.

for clearance¹⁵⁹ through the national banking system was selected. This dependent variable was included in a series of multiple regression models to measure its association with the previously specified indicators of political violence.

The data contained in this study suggest that there were significant changes in the number of marketing firms and their volume of business. Four indicators were selected to reflect these changes. They are the percent of business patente licenses for less than 500 VN\$, percent of business patente licenses for 500-24,999 VN\$, percent of business patente licenses for public works contractors¹⁶⁰ and the number of commercial establishments.¹⁶¹ These four indicators were introduced in a series of multiple regression models alternately as the dependent variables.

Energy consumption is a commonly used indicator of modernization. In the case of South Vietnam, some of its nascent industry, business and government facilities and many private homes are powered by public utility electric energy. As an indicator of over-all utilities development, the per capita electric energy produced¹⁶² was included in a series of multiple regression models as the dependent variable. As indicated earlier, the general index of industrial

¹⁵⁹See Table 8.

¹⁶⁰See Table 9.

¹⁶¹See Table 10.

¹⁶²See Table 5.

production¹⁶³ was also included in a series of multiple regression models as the dependent checking variable.

This group of regression models was computed for the eighteen year development period utilizing annual data. Slope and intercept dummy variables were employed in the models to measure the impact of political violence on changes in the infrastructure variables during each time period of the study. Also, lag structures were developed utilizing the "best fit" models from the OLS regression analysis.

Selection of Key Agricultural Commodity Variables

South Vietnam has a dualistic economy consisting of a large agricultural sector and a small modern sector of industry, government and commerce.¹⁶⁴ Most writers have suggested that the impact of political violence was particularly severe on the development and growth of this important sector of the Vietnamese economy.¹⁶⁵ The role and importance of food marketing is emphasized as a key factor in over-all economic development of less-developed countries,

¹⁶³See Table 4.

¹⁶⁴The economy of South Vietnam changed dramatically over the years of this study. It still retained a large primary sector (approximately 65 percent of the labor force was employed in the primary sector). See Chapter I and Appendix A.

¹⁶⁵Example, see Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam (Cambridge, Massachusetts: The Massachusetts Institute of Technology Press, 1970), p. 103, and Chapter I.

particularly those in possession of a dualistic economy.¹⁶⁶ South Vietnam has a significant plantation element in its agricultural sector.¹⁶⁷ In order to respond to the question: What was the impact of political violence on the production of key agricultural commodities in South Vietnam from 1955 through 1972?, one basic food and three plantation commodities were selected for analysis.

Rice is the principal food in the Vietnamese diet.¹⁶⁸ In fact, food expenditures of rural Vietnamese consist primarily of rice and rice products purchases.¹⁶⁹ South Vietnam was a major rice exporter from 1860 until 1964 when it became a net rice importer.¹⁷⁰ This drastic change in rice available for export occurred in spite of the new improved strains of rice, mechanization of planting, harvesting, irrigation and the general improvement of rice farming management.¹⁷¹ A single indicator, the production of paddy

¹⁶⁶Richard H. Holton, "Marketing Structure and Economic Development," The Quarterly Journal of Economics, Vol. LXVII, No. 3 (August 1953), pp. 349-361.

¹⁶⁷See Appendix A, Table 34.

¹⁶⁸Ann Caddell Crawford, Customs and Culture of Vietnam (Rutland, Vermont: Charles E. Tuttle Co., Publisher, 1966), p. 169.

¹⁶⁹Robert H. Stroup, Rural Income and Expenditure Sample Survey of Vietnam (Initial Report) (Department of State, Agency for International Development, 1967), p. XLI.

¹⁷⁰Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam, Appendix B, pp. 258-263.

¹⁷¹*Ibid.*, pp. 76-84.

(rice),¹⁷² was introduced into a series of multiple regression models as the dependent variable in order to measure the strength of the association between paddy production and the previously specified indicators of political violence.

Some writers, along with daily accounts in the news media, commented upon the particular impact of political violence upon the output of plantation commodities. It is also clear from these reports that the impact of political violence upon all plantation crops was not evaluated by the media as being equal.¹⁷³ The three plantation commodity indicators which reflect these views were selected for use as dependent variables in a series of multiple regression models. The three indicators are rubber production, tea production and coffee production.¹⁷⁴ All three plantation commodities are consumed domestically and enjoyed good export demand during most of the period of this study.

The major thrust of this effort was directed toward quantifying and measuring the impact of political violence upon the output of key agricultural commodities. This series

¹⁷²See Table 3.

¹⁷³Rubber was considered to have suffered more than other plantation crops from the war due to armed attacks in the rubber plantations. See Joint Development Group, The Postwar Development of the Republic of Vietnam: Policies and Programs (New York: Praeger Publishers, 1970), pp. 174-177. Real quarterly production data in addition to annual production data were available for rubber production in South Vietnam and was used in this series of regression models. See Table 12.

¹⁷⁴See Table 3.

TABLE 12
 PRODUCTION OF RUBBER IN SOUTH VIETNAM
 (900 METRIC TONS)

Year/ Quarter	Production ^a (Code REALANRU302C)	Year/ Quarter	Production (Code REALANRU302C)	Year/ Quarter	Production (Code REALANRU302C)
1955 1Q	3.5	1961 1Q	11.2	1967 1Q	8.1
2Q	8.1	2Q	19.7	2Q	9.7
3Q	17.3	3Q	22.1	3Q	11.7
4Q	25.1	4Q	27.5	4Q	14.4
1956 1Q	5.9	1962 1Q	9.6	1968 1Q	3.6
2Q	10.4	2Q	19.4	2Q	6.2
3Q	17.3	3Q	19.9	3Q	8.0
4Q	25.8	4Q	27.1	4Q	10.9
1957 1Q	9.4	1963 1Q	8.4	1969 1Q	4.2
2Q	17.3	2Q	17.3	2Q	5.6
3Q	15.4	3Q	19.9	3Q	7.0
4Q	20.2	4Q	26.2	4Q	9.4
1958 1Q	7.9	1964 1Q	9.1	1970 1Q	3.8
2Q	15.3	2Q	17.7	2Q	6.6
3Q	19.2	3Q	20.8	3Q	7.7
4Q	25.9	4Q	26.8	4Q	10.4
1959 1Q	21.2	1965 1Q	9.4	1971 1Q	4.7
2Q	17.7	2Q	15.8	2Q	7.9
3Q	20.4	3Q	17.0	3Q	9.9
4Q	26.7	4Q	19.3	4Q	12.6
1960 1Q	8.8	1966 1Q	5.8	1972 1Q	5.5
2Q	20.7	2Q	13.4	2Q	3.9
3Q	21.6	3Q	13.8	3Q	4.8
4Q	27.2	4Q	18.5	4Q	5.9

SOURCES: Data for first half 1955 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1956 (New York: The United Nations, 1956), p. 21.

Data for second half 1955 and first half 1956 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1957 (New York: The United Nations, 1957), p. 21.

TABLE 12--Continued

Data for second half 1956 and first half 1957 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1958 (New York: The United Nations, 1958), p. 21.

Data for second half 1957 and first half 1958 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1959 (New York: The United Nations, 1959), p. 21.

Data for second half 1958 and first half 1959 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1960 (New York: The United Nations, 1960), p. 21.

Data for second half 1959 and first half 1960 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1961 (New York: The United Nations, 1961), p. 28.

Data for second half 1960 and first half 1961 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1962 (New York: The United Nations, 1962), p. 24.

Data for second half 1961 and first half 1962 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1963 (New York: The United Nations, 1963), p. 15.

Data for second half 1962 and first half 1963 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1964 (New York: The United Nations, 1964), p. 15.

Data for second half 1963 and first half 1964 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1965 (New York: The United Nations, 1965), p. 15.

Data for second half 1964 and first half 1965 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1966 (New York: The United Nations, 1966), p. 17.

Data for second half 1965 and first half 1966 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1967 (New York: The United Nations, 1967), p. 17.

TABLE 12--Continued

Data for second half 1966 and first half 1967 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1968 (New York: The United Nations, 1968), p. 17.

Data for second half 1967 and first half 1968 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1969 (New York: The United Nations, 1969), p. 17.

Data for second half 1968 and first half 1969 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1970 (New York: The United Nations, 1970), p. 21.

Data for second half 1969 and first half 1970 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1971 (New York: The United Nations, 1971), p. 21.

Data for second half 1970 and first half 1971 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1972 (New York: The United Nations, 1972), p. 21.

Data for second half 1971 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1973 (New York: The United Nations, 1973), p. 21.

Data for first half 1972 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, July 1973 (New York: The United Nations, 1973), p. 21.

Data for second half 1972 are adapted from Statistical Office of the United Nations, Monthly Bulletin of Statistics, January 1974 (New York: The United Nations, 1974), p. 21.

^aProduction is raw rubber.

of regression models, based on both annual and quarterly data, was used to measure the association between key agricultural commodity production and political violence. Slope and intercept dummy variables were employed in this series of models to test for shift parameters and institutional effects while measuring the impact of political violence during each time period of the study. Lab structures were developed based on the "best fit" models produced from the OLS regression analysis.

Selection of Consumption Pattern Variables

There are strong indications that there were radical consumption pattern changes in response to the impact of political violence in South Vietnam from 1955 through 1972.¹⁷⁵ There were changes in the consumption of basic foods such as rice, fish and pork which are key elements of the Vietnamese diet.¹⁷⁶ There were significant changes in the consumption of luxury foods. Sugar and beverages are considered by many developmental writers to be examples of luxury foods in developing economies and are clear indicators of general economic growth. More specifically, they are indicative of

¹⁷⁵ See Douglas C. Dacy, "Availability of Goods in South Vietnam from 1964 through 1967," Study S-336 (Arlington, Virginia: Institute for Defense Analysis, 1969), p. 26, and tables displaying consumption variables in this study.

¹⁷⁶ See Table 3. It is estimated that fish and pork which make up the major element of protein in the Vietnamese diet are equally important with rice. See Douglas C. Dacy, p. 17.

national marketing development.¹⁷⁷ In this same category, other indicators which are associated with economic development as indicators of growth are petroleum, cement and electric energy consumption.¹⁷⁸ Consumption of fabrics, pharmaceuticals and paper products are also associated with the development and growth of an economy.¹⁷⁹

In each case the total availability of the commodity or product for domestic consumption was used regardless of whether or not the item originated through domestic production or was imported. To obtain the net availability, the domestic production was added to the net of imports minus exports.¹⁸⁰

One study indicated that 55 percent of the total cash expenditure of rural households represented outlays for food. If the imputed value of home produced products consumed on the farm is added to total cash expenditures, the

¹⁷⁷Walt W. Rostow, "The Concept of a National Market and Its Economics Growth Implications," in Peter D. Bennett, ed., Marketing and Economic Development (Chicago: American Marketing Association, 1965), p. 17.

¹⁷⁸Standard of living indices such as the Backman's Index includes many of these items. These are indicators of economic development and growth which are in common usage. See J. Scott Armstrong, "An Application of Econometric Models to International Marketing," in Phillip D. Grub and Mila Kaskimies, International Marketing in Perspective (Helsinki: Sininen Kirja Oy, 1971), pp. 131-183, and Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators (New Haven, Connecticut: Yale University Press, 1972).

¹⁷⁹J. Scott Armstrong, p. 183.

¹⁸⁰Some products, such as petroleum, consist entirely of imports, while most other products have a large domestic production with a mix of exports and imports.

value of foodstuffs accounted for about 62 percent of rural income.¹⁸¹ About 34 percent of all food expenditures were for rice and rice products. The second most important food item in the Vietnamese diet, fish and fish products (nuoc nam), accounted for an additional 28 percent of all cash food expenditures.¹⁸² The remaining 38 percent of the total food expenditure was devoted to vegetables, fruit, sugar, beverages, tea and condiments.¹⁸³ The following five indicators of food consumption were included in a series of multiple regression models alternately as dependent variables: per capita rice consumption, per capita fish consumption, per capita pork consumption,¹⁸⁴ per capita sugar consumption and per capita beverage consumption.¹⁸⁵

In addition to changes in the consumption of basic and luxury food items, the consumption of items which were believed to be strongly related with economic development and growth were examined. The first of these was per capita

¹⁸¹Robert H. Stroup, Rural Income and Expenditure Sample Survey of Vietnam (Initial Report) (Department of State, Agency for International Development, 1967), p. XXXII.

¹⁸²Ibid., p. XLI. "Nuoc nam" is a fermented fish sauce which is used as a protein supplement in the Vietnamese diet. See Ann Caddell Crawford, Customs and Culture of Vietnam (Rutland, Vermont: Charles E. Tuttle Co., Publisher, 1966), p. 176.

¹⁸³Stroup, Rural Income and Expenditure Sample Survey of Vietnam (Initial Report), p. XLI.

¹⁸⁴See Table 13.

¹⁸⁵See Table 14.

TABLE 13
CONSUMPTION OF BASIC FOODS IN SOUTH VIETNAM
(KILOGRAMS)

Year	Per Capita Rice ^a Consumption (Code PCRCS401)	Per Capita Fish ^b Consumption (Code PCFCS402)	Per Capita Pork ^c Consumption (Code PCPCS403)
1955	144	15.9	4.8
1956	179	11.8	4.9
1957	145	11.2	4.9
1958	204	15.9	5.4
1959	222	15.2	5.1
1960	205	15.8	5.4
1961	196	17.7	5.0
1962	231	17.8	4.0
1963	222	26.7	4.0
1964	231	27.8	4.9
1965	212	24.9	5.7
1966	215	25.2	5.2
1967	234	25.3	5.2
1968	216	26.2	3.3
1969	222	28.0	4.5
1970	247	23.3	4.7
1971	227	31.4	4.7
1972	224	35.2	3.8

SOURCES: Per capita rice consumption data for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1958), pp. 103, 104.

Per capita rice consumption data for 1957-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 88, 89, 323.

Per capita rice consumption data for 1967-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 67-72, 164, 300, 301.

TABLE 13--Continued

Per capita fish consumption data regarding fish catch for 1955-1959 are based on average number of workers per boat. See Republic of Vietnam, Vietnam Statistical Yearbooks, 1956, 1957, 1958-1959 (Saigon: National Institute of Statistics) 1956, p. 219; 1957, pp. 148, 149; 1958-1959, pp. 256-258.

Per capita fish consumption data regarding imports and exports of fish for 1955-1959 are adapted from Republic of Vietnam, Vietnam Statistical Yearbooks, 1956, 1957, 1958-1959 (Saigon: National Institute of Statistics) 1956, p. 219; 1957, pp. 221, 234; 1958-1959, pp. 347, 360.

Per capita fish consumption data regarding fish catch for 1960-1961 are adapted from U.S. Department of State, United States Operations Mission-Vietnam, Marine Fishery Statistics of Vietnam, 1962 (Saigon: United States Operations Mission-Vietnam, 1962), pp. 15-41).

Per capita fish consumption data for 1962-1965 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 120, 177.

Per capita fish consumption data for 1966-1967 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), pp. 68, 270, 286.

Per capita fish consumption data for 1968-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 139, 160, 331.

Per capita pork consumption data for 1955-1961 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1968), pp. 168, 302.

Per capita pork consumption data for 1962-1963 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1971 (Saigon: National Institute of Statistics, 1972), pp. 41, 204.

Per capita pork consumption data for 1964-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 144, 160, 320.

TABLE 13--Continued

^aThe net rice available for consumption was computed by converting annual paddy production to polished rice using a conversion ratio of 65%. (See Robert L. Sansom, The Economics of Insurgency in the Mekong Delta of Vietnam (Cambridge: The Massachusetts Institute Press, 1970), p. 24. The net weight of rice exports and imports was included.

^bThe net fish available for consumption was computed from the annual live fish catch and the net weight of fish exports and imports which were included.

^cThe net pork available for consumption was computed from the annual controlled pork slaughtering and the net weight of pork exports and imports which was included. Non-controlled slaughtering was possible and tends to understate the per capita pork consumption.

TABLE 14
CONSUMPTION OF SELECTED LUXURY FOODS
IN SOUTH VIETNAM

Year	Per Capita Sugar ^a Consumption (Kilograms) (Code PCSCS404)	Per Capita Beverages ^b Consumption (Liters) (Code PCBCS405)
1955	5.1	7.8
1956	5.4	6.9
1957	5.4	7.0
1958	5.5	6.9
1959	7.5	6.2
1960	9.7	6.5
1961	9.2	6.3
1962	10.2	7.5
1963	10.6	9.0
1964	10.1	11.2
1965	11.5	12.9
1966	11.4	13.8
1967	17.2	14.0
1968	18.7	13.5
1969	17.8	15.9
1970	20.8	16.5
1971	30.0	14.9
1972	24.9	14.2

SOURCES: Per capita sugar consumption data for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1957), pp. 123, 220.

- Per capita sugar consumption data for 1957 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1957 (Saigon: National Institute of Statistics, 1959), pp. 128, 222.

Per capita sugar consumption data for 1958-1963 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), pp. 213, 303.

TABLE 14--Continued

Per capita sugar consumption data for 1964-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 199.

Per capita beverage consumption data for 1955-1966 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1966-1967 (Saigon: National Institute of Statistics, 1967), p. 211.

Per capita beverage consumption data for 1967-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 197.

^aPer capita consumption of sugar was computed from both refined and raw sugar. Refined sugar has a greater sweetening power than raw sugar. Imports of raw and refined sugar were added to domestic production. There were no exports of raw or refined sugar.

^bBeverage consumption consisted of soft drinks, beer and alcohol products. Alcohol products were approximately 90 percent rice alcohol. Exports and imports of beverages were reported in metric tons and therefore were not included in the total which was restricted to domestic production.

electric energy production.¹⁸⁶ The consumption of electric energy by government, businesses and domestic households was grouped into one over-all indicator. The second item is per capita selected petroleum products consumption.¹⁸⁷ Again, all petroleum products were grouped into one over-all indicator of the use of this commodity. The final indicator in this group is per capita cement consumption.¹⁸⁸ These variables were included in a series of multiple regression models alternately as the dependent variable.

The last three indicators have been included to reflect changes in consumption of items which are less essential than food and which reflect an element of affluence in consumption. These selected soft goods variables are: per capita domestic fabric consumption, per capita pharmaceutical products consumption and per capita paper products consumption.¹⁸⁹ These variables were included in a series of multiple regression models alternately as the dependent variable.

This series of tests were directed in determining the association between changes in consumption patterns and the impact of political violence variables on these patterns of consumption. The purpose is to determine the truth of the research question that political violence impacted on

¹⁸⁶Production approximately equalled consumption; See Table 5.

¹⁸⁷See Table 15.

¹⁸⁸Ibid.

¹⁸⁹See Table 16.

TABLE 15
CONSUMPTION OF SELECTED BASIC INDUSTRIAL
COMMODITIES IN SOUTH VIETNAM

Year	Per Capita Selected ^a Petroleum Consumption Products (Liters) (Code PCSPC406)	Per Capita Cement ^b Consumption (Kilograms) (Code PCCCS407)
1955	21.9	12.2
1956	23.5	15.4
1957	23.9	17.5
1958	27.3	22.0
1959	26.9	22.3
1960	26.6	21.7
1961	25.2	25.4
1962	30.1	28.1
1963	32.4	31.6
1964	31.4	35.7
1965	30.6	41.0
1966	41.1	33.3
1967	47.6	40.4
1968	47.5	27.8
1969	63.0	42.7
1970	66.5	56.4
1971	65.9	65.0
1972	70.1	46.6

SOURCES: Per capita selected petroleum products consumption data for 1955-1957 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1968), p. 251.

Per capita selected petroleum products consumption data for 1958-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 218.

Per capita consumption of cement data concerning cement imports for 1955-1962 are adapted from Republic of Vietnam, Vietnam Statistical Yearbooks, 1955, 1957, 1958-1959, 1960-1961, 1962 (Saigon: National Institute of Statistics,

TABLE 15--Continued

1956-1962), 1955, p. 221; 1957, p. 223; 1958-1959, p. 349; 1960-1961, p. 336; 1962, p. 250.

Per capita consumption of cement data concerning domestic production and imports of cement for 1963-1965 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1964-1965 (Saigon: National Institute of Statistics, 1965), p. 244.

Per capita consumption of cement data concerning domestic production and imports of cement for 1966-1967 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1968), p. 241.

Per capita consumption of cement data concerning domestic production and imports of cement for 1968-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 203.

^aThere was no domestic production of petroleum products during the period of this study. Per capita consumption of selected petroleum products consisted of aviation gasoline, motor car gasoline, gasoline-oil mixture and petroleum. The consumption of other minor petroleum products, such as lubricating oils, solvent thinner, asphalt, greases, paraffin wax and L.P. gas, were not included.

^bThere was no domestic cement production capability prior to 1963.

TABLE 16
CONSUMPTION OF SELECTED SOFT GOODS
IN SOUTH VIETNAM

Year	Per Capita Domestic Fabric Consumption (Meters) (Code PCDFC408) ^a	Per Capita Pharmaceutical Products Consumption (VN\$) (Code PCPPC409) ^b	Per Capita Paper Products Consumption (Kilograms) (Code PCPAC410) ^c
1955	-	33.8	2.4
1956	-	34.4	2.0
1957	-	50.9	2.4
1958	-	39.1	1.8
1959	-	36.2	2.2
1960	11.3	34.7	1.9
1961	9.4	31.8	2.4
1962	8.4	26.7	2.4
1963	13.5	24.9	2.2
1964	12.7	25.8	3.0
1965	13.1	24.8	3.7
1966	12.9	27.8	5.0
1967	7.1	25.4	5.6
1968	4.7	19.4	3.6
1969	6.4	14.8	5.5
1970	7.5	13.5	6.1
1971	6.4	42.5	7.8
1972	4.1	53.6	5.7

SOURCES: Per capita domestic fabric consumption data for 1960-1965 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1964-1965 (Saigon: National Institute of Statistics, 1966), p. 242.

Per capita domestic fabric consumption data for 1966-1968 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), p. 192.

TABLE 16--Continued

Per capita domestic fabric consumption data for 1969-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 201.

Per capita pharmaceutical products data for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1957), pp. 222, 235.

Per capita pharmaceutical products data for 1957-1965 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1964-1965 (Saigon: National Institute of Statistics, 1966), pp. 329, 355.

Per capita pharmaceutical products data for 1966-1967 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1967-1968 (Saigon: National Institute of Statistics, 1967), pp. 307, 320.

Per capita pharmaceutical products data for 1968-1969 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), p. 275.

Per capita pharmaceutical products data for 1970-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), pp. 149, 161.

Per capita paper products consumption data for 1955-1956 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1956 (Saigon: National Institute of Statistics, 1956), p. 224.

Per capita paper products consumption data for 1957-1964 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1964-1965 (Saigon: National Institute of Statistics, 1966), pp. 243, 333.

Per capita paper products consumption data for 1965-1969 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1969), p. 193.

Per capita paper products consumption data for 1970-1972 are adapted from Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 202.

TABLE 16--Continued

^aDomestic production prior to 1960 consisted of yarn, thread and other textile raw materials only. Limited exports have been subtracted from domestic fabric production to arrive at the net domestic fabric available for consumption.

^bThese data refer to imported pharmaceutical products used in modern medical technology. There is no known published data regarding the domestic production of pharmaceutical products. Prices are adjusted based on consumer price index of working class families in Saigon, excluding rent (Base 1963-100). See Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 353.

^cThere was no domestic production of paper products prior to 1962. Imports of paper products have been added to domestic production to arrive at net paper products available for consumption. There were no paper products exports during the period of this study.

consumption patterns. In addition to the OLS regression models, slope and intercept dummy variables were included in a series of regression models to test for shift parameters and institutional effects while measuring the impact of political violence on consumption pattern changes during the three time periods of the study. Lag structures were developed based on the "best fit" model produced from the OLS regression analysis.

Data Problems

The first and most limiting feature of the data used in this study is that it is aggregate data. Both the indicators of political violence and marketing development are aggregate measures of these phenomenon.¹⁹⁰ This study deals with one national state and, therefore, it is appropriate that the data measures be attributed directly to conditions in that country. Some writers feel that aggregate data tend to lead researchers to false conclusions, but Erwin Scheuch has stated that aggregate data can legitimately be used as long as the unit about which one's conclusions refer is the unit

¹⁹⁰ See Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd Ed. (New Haven, Connecticut: Yale University Press, 1972), pp. ix-xi for a discussion of the limitations of aggregate political data and see Paul A. Samuelson, Economics, Ninth Ed., (New York: McGraw-Hill Book Company, 1973), pp. 199-204 for a discussion of the limitations of aggregate economic data.

which the aggregate data describe.¹⁹¹ For example, if per capita GNP is used as an indicator of economic growth, it would be improper to refer to the growth of a particular sector of the economy. A more appropriate measure of economic sector growth would be, for example, the contribution of a specific economic sector to GDP at factor or market prices.

Both the indicators of political violence and marketing development are the actions of individuals or groups in the country. For example, riots and demonstrations are individual or group actions just as employment in the wholesale and retail sub-sector and contributions of that sub-sector to GDP are individual or group actions. However, the conclusions reached in the study refer to the aggregate changes which occurred in national political violence and marketing development and not to individual or group behavior.¹⁹²

The quality of aggregate data, particularly in the less-developed countries, is frequently in doubt. Many of these countries do not have the capability and resources necessary to collect, process and report high quality aggregate data. In fact, many researchers believe that the quality of aggregate data varies directly with the level of development. In

¹⁹¹Erwin K. Scheuch, "Cross-National Comparisons Using Aggregate Data: Some Substantive and Methodological Problems," Comparing Nations: The Use of Quantitative Data in Cross-National Research, eds. Richard L. Merritt and Stein Rokkan (New Haven, Connecticut: Yale University Press, 1966), pp. 131-167.

¹⁹²Ralph H. Retzlaff, "The Use of Aggregate Data in Comparing Political Analysis," Aggregate Data Analysis, ed., by C. L. Taylor (Paris: Mouton and Co., 1968), p. 64.

this study, the marketing development data were taken almost entirely from statistics developed by the Vietnamese National Institute of Statistics. The statistics developed by the institute are believed to be superior in quality to those developed by similar less-developed countries. This can be attributed largely to the recognition of need for high quality statistics on economic and social status of the country by the various Vietnamese administrations. There was extensive technical and economic aid provided by the United States to South Vietnam in support of its national statistical efforts. In a report in 1962, Mr. Newton B. Know, General Statistical Advisor of the United States Operations Mission to Vietnam, reported that "The development of statistics in Vietnam has been the result of great efforts on the part of many devoted Vietnamese officials working in close cooperation with foreign technicians of many nationalities and from many agencies . . ."¹⁹³ A review of statistical development in Vietnam conducted in 1970 revealed that:

It is apparent from this brief examination of statistical information available in Vietnam that a great deal of serious and skilled effort has been devoted to producing, assembling and publishing data relevant to the economic and social status and development of the country. . . . information included in the annual statistical publications compares most favorably with

¹⁹³ Newton B. Know, "The Republic of Vietnam's Official Statistics 1957-1963: Six Years of Technical and Administrative Development," (Washington, D.C.: U.S. Department of Commerce, 1963), p. 1.

similar publications of other developing countries.¹⁹⁴

The quality of aggregate political instability data is frequently questioned. As pointed out by Rummel, there are three factors which may cause the understating of political instability events. They are news censorship, lack of interest in internal conflict which may lead to underreporting, and minor acts may be overshadowed by more important world events.¹⁹⁵ The political violence data which was used in this study for the years 1955 through 1967 were taken from the archives of the Inter-University Consortium for Political Research at the University of Michigan. These data have been subjected to various tests of error by the original authors.¹⁹⁶ The cautions which have been taken in the collection, analysis and presentation of these data appear to be more than adequate. Political instability data for the time period 1968 through 1972 were extracted and organized by two coders due to its non-availability from published or institutional sources. The same source, techniques, coding and rules employed in developing political violence data for the years 1955 through 1967 were used in this project.¹⁹⁷

¹⁹⁴Ibid.

¹⁹⁵Rudolph J. Rummel, "Dimensions of Conflict Behavior Within and Between Nations," General Systems Yearbook, Vol. 8, p. 6.

¹⁹⁶Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators. See Appendix 1, "The Collection of Political Events Data," pp. 391-423.

¹⁹⁷See Appendix C.

CHAPTER IV

THE IMPACT OF POLITICAL VIOLENCE ON NATIONAL MARKETING DEVELOPMENT

National marketing development was measured in this study utilizing conventional sector employment and national income indicators. This step was taken in order to provide a base from which the measurement of the impact of political violence on national marketing development could be made. The results of this conventional marketing development analysis were reported in this chapter along with comparisons to other developing countries. The measurement of the impact of political violence on national marketing development extended beyond the conventional analysis and was the major task undertaken in this study. The results of this new dimension of national marketing development were reported in this chapter.

Plan of Analysis

One major and three minor research questions were addressed in this study. The multiple regression models, which aid in the analysis of these research questions, showed many similarities in their variable construction, computation and reported results. Dummy independent variables were used to test for the homogeneity of the slopes and intercepts. This aided in making a determination as to whether or not the

three political violence time periods of the study should be separated. The dummy variables were employed identically in the multiple regression models. Lag structures were computed for each dependent variable. The cumulative political violence events index and the most significant independent variable from the "best fit" models were used as the independent variables in these structures. The lag structures were based on a common theory and had similar explanations. Therefore, the discussion of the analysis of each research question proceeded along similar lines. The notable exception to this pattern was in the analysis of the major research question where the measurement of conventional national marketing development was reported prior to reporting the impact of political violence on national marketing development.

There were a series of regression models and lag structures associated with each research question. In each series, a regression model was constructed and computed. The models contained each of the marketing development indicators as the dependent variable and the cumulative political violence events index as the independent variable. The results of these simple regression models were reported in each case, regardless of the significance of the relationship. The next step in the analysis of a research question was to introduce alternately into multiple regression models the marketing development variables as the dependent variable and the five basic political violence indicators (protest demonstrations, government sanctions, riots, armed attacks, and

deaths from political violence) as independent variables. The results of the multiple regression models were reviewed, and independent variables were excluded from the next iteration of the model if their respective T-ratio statistic was not significant at the 95 percent confidence level. The newly constructed model was then computed, and the process of excluding insignificant independent variables from the model was repeated until all the independent variables in the model were significant based on their T-ratio statistic at the 95 percent confidence level.¹ This backward step-wise regression analysis technique, which was based on the T-ratio statistic, resulted in the "best fit" regression model and maximizes significance. The results of each "best fit" regression model were reported in table form. There were a few "best fit" models which did not have significant T-ratio statistics, but it was necessary to report these to complete the analysis.

The next step was to construct a series of simple and multiple regression models as outlined above. The same dependent variables were utilized, but dummy intercept and slope variables were substituted for the independent variables. This substitution of dummy variables allowed the researcher to test for institutional effects and structural changes during the three important political violence time periods. Simple regression models were constructed and

¹A few multiple regression models contain insignificant variables.

computed using the cumulative political violence events index as the independent variable and each marketing development as the dependent variable. Multiple regression models were also constructed using alternately the marketing development variables as the dependent variable and dummy variables of the five basic political violence indicators as the independent variables. The backward step-wise process outlined above was repeated for the models employing the dummy independent variables.

The last step in the preparation for the analysis for each research question was the construction and computation of lag structures for each marketing development indicator as the dependent variable and the cumulative political violence events index as the independent variable. As in the simple regression model analysis, the results of this lag structure were reported in a chart plot of the normalized lag coefficients, regardless of the level of significance. Also, the independent variable with the highest T-ratio statistic from the "best fit" multiple regression model was used as the independent variable with the marketing development dependent variable.

Annual data was used in each series of regression models.² The results of these separate regressions were reported and compared in the analysis of each research question. The lag structures were computed utilizing only

²Quarterly data was used in the three series in which this data was available.

annual data except in cases where there were actual quarterly marketing development data.

National Marketing Development

The development of a national marketing system was measured through the use of economic sector employment and national income statistics. These indicators were used in the absence of more precise measures. The precision of these data was improved by disaggregating sector employment and national income statistics. Fortunately, disaggregated statistics had been reported for both of these indicators for South Vietnam. When these indicators were subjected to empirical testing, the results were mixed. This can be best explained by the fact that all of the relevant variables may not have been included in the analysis. In fact, it would have been impractical to collect and include in the analysis of marketing development all of the possible relevant variables which were associated with this development. In order to test the relevance of non-conventional variables, this study went beyond the traditional analysis in measuring marketing development. In addition to the traditional measures of marketing development, this study measured the specific impact of political violence on national and sub-sector marketing development in South Vietnam.

Conventional Measures

The first series of multiple regression models used the percent of the labor force employed in the tertiary sector,

percent of the labor force employed in the commercial sub-sector, and the percent of the labor force employed in the wholesale and retail trade sub-sector alternately as the dependent variable. The per capita GNP, the GDP and sub-sector contributions to GDP which correspond to the respective employment sub-sectors were the independent variables in this series.

The percent of the labor force employed in the tertiary sector was regressed as the dependent variable in a simple regression model against the per capita GNP as the independent variable.³ This was an initial test of the generally accepted theory that per capita increases in GNP are associated with an increase in the percent of the labor force employed in the tertiary sector. Both the intercept and the per capita GNP exhibited highly significant T-ratios of 44.28 and 5.89 respectively. The F-ratio of 34.74 indicated a highly significant level of correlation in the over-all model. The R^2 Bar of .6847 indicated that 68.47 percent of the deviations in the percent of the labor force employed in the tertiary sector was explained by per capita GNP. The intercept was negative at -43.86 which was attributed to the loss of capital, manpower and transfers of other resources into the war effort.⁴ In developing countries, not experiencing conditions of increasing political violence, the intercept is expected to be positive. This test showed that there

³See Table 17.

⁴See Table 1, and Appendix B.

TABLE 17
GROSS MEASURES OF ANNUAL MARKET

Dependent Variable	Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Per Capita GNP (1960 Prices) (Code PCGNP102) ^d	Gross Domestic Product (GDP) (Current Prices) (Code GDPCP103)	Percent of the GDP Contributed by the Tertiary Sector (Code PGDPT104)	Percent of the GDP Contributed by the Commercial Sub-Sector (Code OGDPC106)	Percent of the GDP by the Wholesale Trade Sub-Sector (Code PGDPT107)
Percent of the Labor Force Employed in the Tertiary Sector (Code PLFTS101)		-43.86 ^a (44.28) ^b	.0104 (5.89)	- ^c	-	-	-
		-36.272 (59.75)	.008292 (7.20)	.00001173 (4.75)	.04776 (.26)	-	-
		-33.92 (57.69)	.00831 (7.47)	.00001201 (5.52)	-	-	-
		-4.541 (10.22)	.003057 (1.83)	.000005184 (2.02)	-	-	-
		13.10 (26.96)	-	-	-	-	-
Percent of the Labor Force Employed in the Commercial Sub-Sector (Code PLFCS105)		3.490 (63.97)	-	-	-	-.06136 (2.25)	-
		4.402 (136.32)	.0001662 (2.14)	.000000121 (.80)	-.07588 (5.15)	.03859 (1.42)	-
		4.695 (144.61)	.0001044 (1.76)	-	-.05854 (6.67)	-	-
		4.734 (145.63)	-	-	-.04771 (4.98)	-	-
Percent of the Labor Force Employed in the Wholesale and Retail Trade Sub-Sector (Code PLWRT107)		2.657 (51.51)	-	-	-	-	-.041 (1.7)
		3.781 (114.77)	.0001292 (.99)	-.0000001732 (.38)	-.06848 (4.50)	.04159 (1.03)	.031 (.44)
		3.598 (116.96)	.0001755 (2.37)	-	-.06862 (5.67)	.05351 (2.19)	-
		2.298 (48.68)	-	-	-	-	-.018 (.4)

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

TABLE 17

MEASURES OF ANNUAL MARKETING DEVELOPMENT

The GDP by the Sector (106)	Percent of the GDP Contributed by the Wholesale and Retail Trade Sub-Sector (Code PGDPM108)	Institutional Effects (Shift Parameters)			R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
		Intercept (Regression Coefficient)(T-Ratio)									
		DUMMY0 1955-60	DUMMY1 1961-64	DUMMY2 1965-72							
	-	-	-	-	.6847	.6847	34.746	1.746	4.490	.796	.500
	-	-	-	-	.8964	.8826	40.383	1.746	3.340	.397	1.219
	-	-	-	-	.8959	.8894	64.544	1.753	3.680	.401	1.207
	-	-	4.216 (2.62)	9.917 (3.64)	.9485	.9374	59.834	1.771	3.180	.127	1.769
	-	-	6.20 (4.66)	15.39 (13.82)	.9289	.9244	97.968	1.753	3.680	-.052	2.150
	-	-	-	-	.2409	.2409	5.077	1.746	4.490	.363	1.269
	-	-	-	-	.7840	.7377	11.794	1.771	3.180	-.346	2.699
	-	-	-	-	.7481	.7323	22.268	1.753	3.680	-.252	2.507
	-	-	.1529 (1.75)	-	.7474	.7316	22.191	1.753	3.680	-.186	2.437
	-.04178 (1.71)	-	-	-	.1551	.1551	2.938	1.746	4.490	.341	1.350
	.03142 (.44)	-	-	-	.7452	.6668	7.020	1.782	3.110	-.332	2.671
	-	-	-	-	.7407	.7062	13.333	1.761	3.340	-.330	2.662
	- .01506 (.45)	-	.2477 (1.91)	-.06981 (.46)	.3895	.3082	2.978	1.761	3.340	.184	1.685

Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

Indicated by - .

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was a 1.04 percent sensitivity in the tertiary labor force for each 100 VN\$ increase in real per capita income. These results were similar to those reported by Moyer of 1.13 percent in the United States and 1.63 percent in Great Britain. However, it was very difficult to compare these results with those reported by Kuznets for less-developed countries where there were a wide range of results. The Durbin-Watson statistic of .50 indicated that there was positive autocorrelation in this model.

An Almon lag scheme was generated for the relationship to determine the lag structure and the channel effects of per capita GNP to the percent of the labor force employed in the tertiary sector.⁵ It was interesting to find that the "best fit" structure was a third degree polynomial with a three year lagged period. This structure indicated that the most significant effects of political violence on the GNP were contained in the second year.

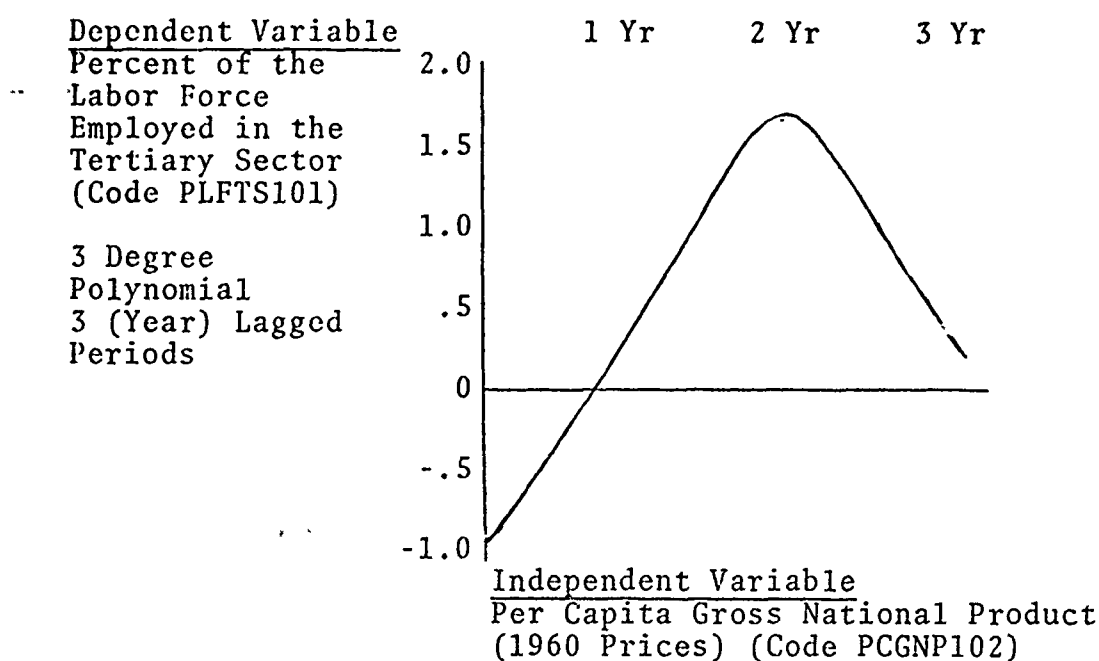
Polynomial Equation Measures

Second and third degree polynomial equation regression models were developed for the above relationship in order to test the non-linearity conditions suggested by Moyer.⁶ It was found that the results were significantly improved by a larger degree polynomial indicating that the data had a non-linear structure. The second degree polynomial regression

⁵See Figure 1(a).

⁶See Table 18.

(a)



(b)

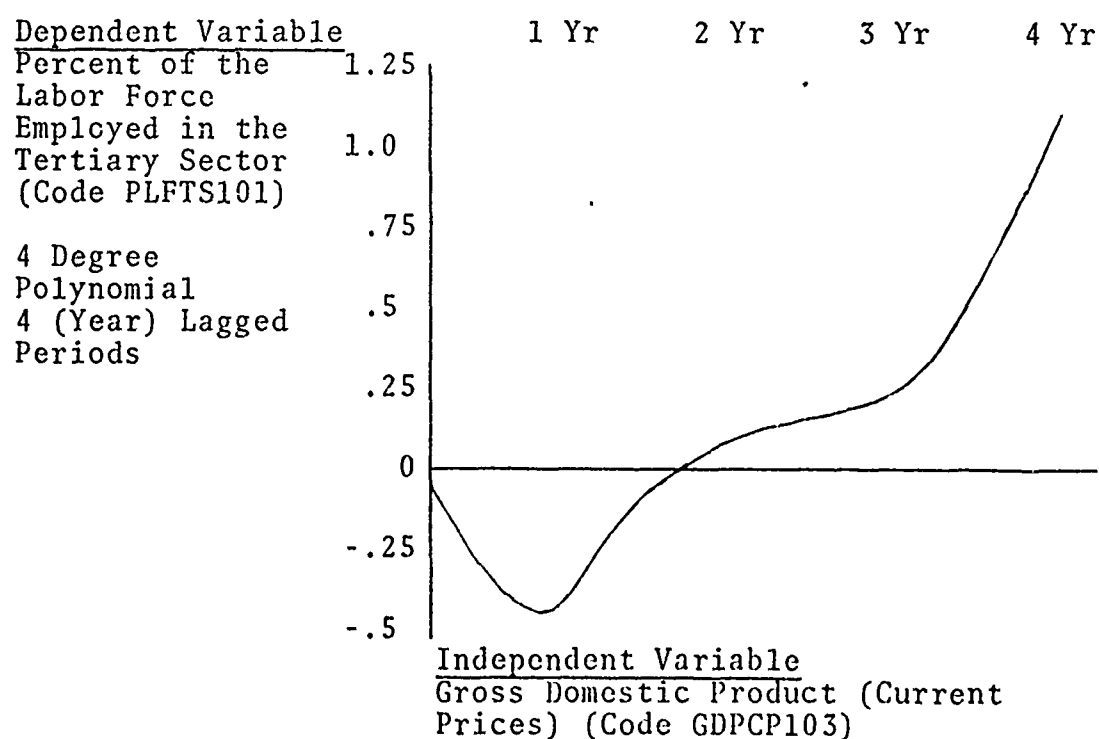


Fig. 1. Lag structures of percent of the labor force employed in the tertiary sector.

TABLE 18
MEASURE OF ANNUAL TERTIARY SECTOR D

<div>Dependent Variable</div>	<div>Independent Variable(s)</div>	<div>Intercept (Regression Coefficient) (T-Ratio)</div>	<div>Per Capita GNP (1960 Prices)</div>			<div>Institutional Effects (Shift Parameters)</div>			<div>(Code)</div>
			<div>(Code PCGNP102)^d</div>	<div>(Code PCGNP102X²)</div>	<div>(Code PCGNP102X³)</div>	<div>Intercept (Regression Coefficient)(T-Ratio)</div>			
						<div>DUMMY0 1955-60</div>	<div>DUMMY1 1961-64</div>	<div>DUMMY2 1965-72</div>	
<div>Percent of the Labor Force Employed in the Tertiary Sector (Code PLFTS101)</div>		<div>-.03729^a (435.16)^b</div>	<div>.1158 (2.78)</div>	<div>-.000008381 (2.53)</div>	<div>-^c</div>	<div>-</div>	<div>-</div>	<div>-</div>	
		<div>311.5 (3965.98)</div>	<div>-1.544 (1.82)</div>	<div>.0002537 (1.90)</div>	<div>-.00000001373 (1.96)</div>	<div>-</div>	<div>-</div>	<div>-</div>	
		<div>-</div>	<div>-</div>	<div>-</div>	<div>-</div>	<div>-2.883 (1.11)</div>	<div>-16.50 (1.60)</div>	<div>53.82 (4.64)</div>	

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

TABLE 18

GROWTH OF ANNUAL TERTIARY SECTOR DEVELOPMENT

Shift Parameters		Structural Changes (Slope Changes)			R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
Coefficient	(T-Ratio)	Per Capita GNP (1960 Prices) Dummy Variables									
MY1 1964	DUMMY2 1965-72	(Code XPCGNP102) 1955-60	(Code YPCGNP102) 1961-64	Code ZPGGNP102) 1965-72							
-	-	-	-	-	.7789	.7651	26.419	1.753	3.680	.443	1.105
-	-	-	-	-	.8366	.8035	22.210	1.761	3.340	.374	1.201
5.50 (1.60)	53.82 (4.64)	.002829 (.59)	.005678 (3.51)	.003764 (2.18)	.9725	.9610	64.843	1.796	3.090	-.005	1.959

ase, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

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equation model improved the R^2 Bar 11.40 percent over the OLS linear model, and the R^2 Bar of the third degree polynomial regression equation model was 5.00 percent higher than the second degree polynomial regression equation model. The negative level of the intercept in the second degree model improved to only -.037 and was positive in the third degree model. The T-ratios were highly significant on the intercept of both the second and third degree models. Also, the GNP independent variables had significant T-ratios in both the second and third degree models. The second degree and third degree models improved with respect to autocorrelation conditions from positive conditions to the inconclusive range. There was multicollinearity in these models which was unavoidable, because the X^2 and X^3 data were functions of per capita GNP. These findings were consistent with Moyer who reported that the percent of the labor force employed in the tertiary sector tends to level off or turn down after high levels of per capita national income are reached in an economy.

Refined Measures

The suggestion of Moyer, Preston, and others that there are more precise measures of marketing development than total tertiary sector employment and per capita GNP was subjected to a test through the use of several multiple regression models.⁷ In addition to GNP as an independent variable, the

⁷See Table 17.

GDP and the percent of the GDP contributed by the tertiary sector were included as independent variables in a multiple regression model. Again, the dependent variable was the percent of the labor force employed by the tertiary sector.

The results of this model showed that the T-ratios were very significant for all independent variables except the percent of the GDP contributed by the tertiary sector. The F-ratio was highly significant, indicating a high level of correlation in the model. The R^2 Bar indicated that 88.26 percent of the deviation in the percent of the labor force employed in the tertiary sector was explained by these independent variables. The presence of autocorrelation in this model was in the inconclusive range. The intercept continued to be highly significant and negative but at a reduced level of -36.27. Again, the negative condition was attributed to resource consumption and the corresponding shrinkage of production capacity in the economy.

An Almon lag structure was generated using the percent of the labor force employed in the tertiary sector as the dependent variable and the GDP as the independent variable.⁸ The "best fit" structure in this case was a fourth degree polynomial for a four year lagged period. The lag structure effect was negative during the first year and then turned positive with the greatest effects occurring in the third and fourth years of the lagged period. This indicated that the lagged effect of GDP was not as immediate as the GNP which

⁸See Figure 1(b).

occurred in the second year. This was largely accounted for by the fact that GNP data included exports and imports and thus the effect was more immediate.⁹

A test to determine if significant shift parameters had become institutionalized was also conducted.¹⁰ Dummy variables were included as intercept variables for the three time periods of the study. The two significant time periods were "pre-insurgency" and "limited war" in the model which included per capita GNP and GDP as significant independent variables. The over-all correlation of the model improved to a level of highly significant at an F-ratio of 59.83 and the R^2 Bar indicated that the independent variables had explained 93.74 percent of the deviation in the dependent variable. The test for autocorrelation in this model indicated that it was in the inconclusive range. The intercept continued to be significant and exhibited less of a negative trend at only -4.54. Finally, the intercept was tested independently of the independent variables, except the intercept dummy variables, to determine if the labor force data had become institutionalized in any of the time periods. The results indicated that "insurgency" and "limited war" were significant time periods for this variable and that 92.44 percent of the deviation in this variable was attributable to these two periods.

⁹See Tables 1 and 2, and Appendix B.

¹⁰See Table 17.

As proposed by Preston, the percent of the labor force employed in the commercial sub-sector as the dependent variable was regressed against per capita GNP, GDP, percent of the GDP contributed by the tertiary sector and percent of the GDP contributed by the commercial sub-sector in a series of multiple regression models.¹¹ This group of tests determined whether or not the significance of the association between tertiary sub-sector employment and the corresponding contribution of each sub-sector to GDP improved over the results found at the tertiary sector level.

The first model utilized the percent of the labor force employed in the commercial sub-sector as the dependent variable and the corresponding percent of the GDP contributed by the commercial sub-sector as the independent variable. The over-all model F-ratio indicating total model correlation was much lower than in the tertiary sector model but was significant. Also, the percent of the GDP contributed by this sector was significant. However, the R^2 Bar of .2409 was low compared to the tertiary sector model. The intercept improved to a positive condition of 3.49 and was significant. The test for autocorrelation was in the inconclusive range.

An Almon lag structure was developed utilizing percent of the GDP contributed by the tertiary sector as the most potent independent variable from the OLS multiple regression model. This was done in order to determine its channel effects to the percent of the labor force employed in the

¹¹Ibid.

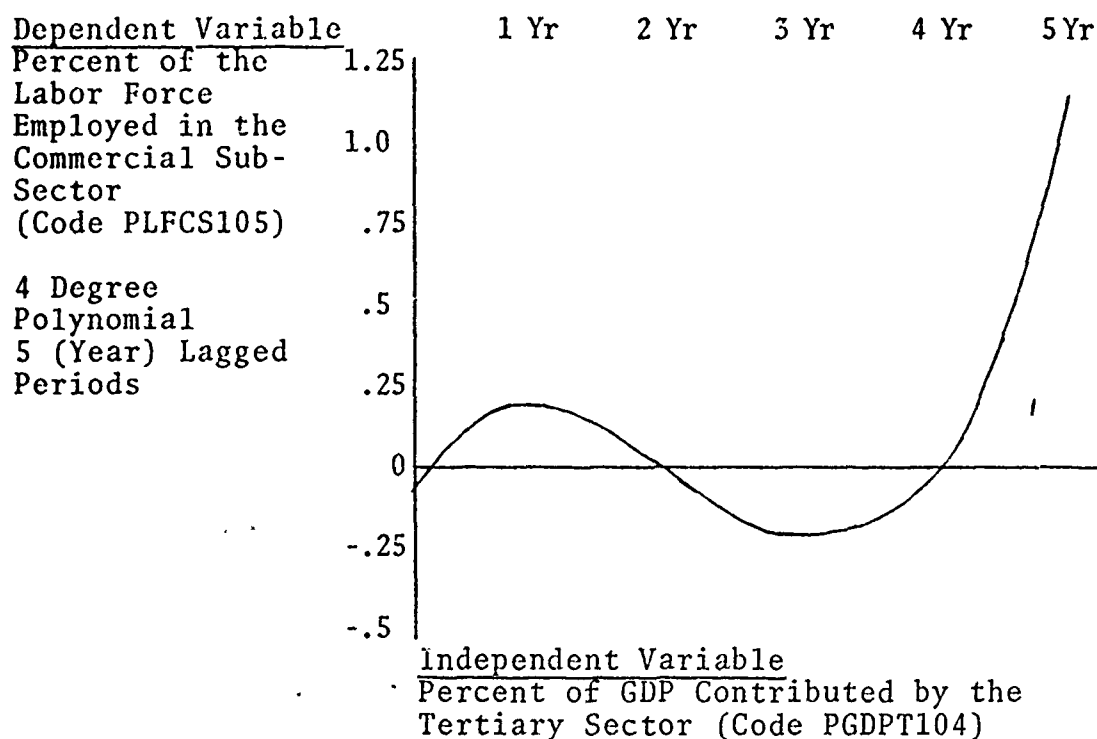
commercial sub-sector as the dependent variable.¹² A fourth degree polynomial with a five year lagged period produced the "best fit". There was a slight effect in the first year, no effect in the second year, a negative effect in the third and fourth years, and the large positive effect occurred in the fifth year. These results indicated that contributions to tertiary sector GDP were not realized in changes in the commercial sub-sector labor force for five years. /

During the next iteration of this model, the per capita GNP, GDP and percent of the GDP contributed by the tertiary sector were independent variables in a multiple regression model.¹³ The results of this model indicated that only per capita GNP and percent of the GDP contributed by the tertiary sector had T-ratio statistics which were significant at the 95 percent confidence level. The over-all model correlation was highly significant, as indicated by an F-ratio of 11.79. The R^2 Bar was .7377. This indicated that the independent variables in the model explained 73.77 percent of the deviation in the dependent variable. The next model excluded the independent variables from the previous model which were insignificant and resulted in a slight improvement in the T-ratios for the independent variables remaining (namely, per capita GNP and percent of the GDP contributed by the tertiary sector). There was a corresponding slight decrease in the over-all correlation of the

¹²See Figure 2(a).

¹³See Table 17.

(a)



(b)

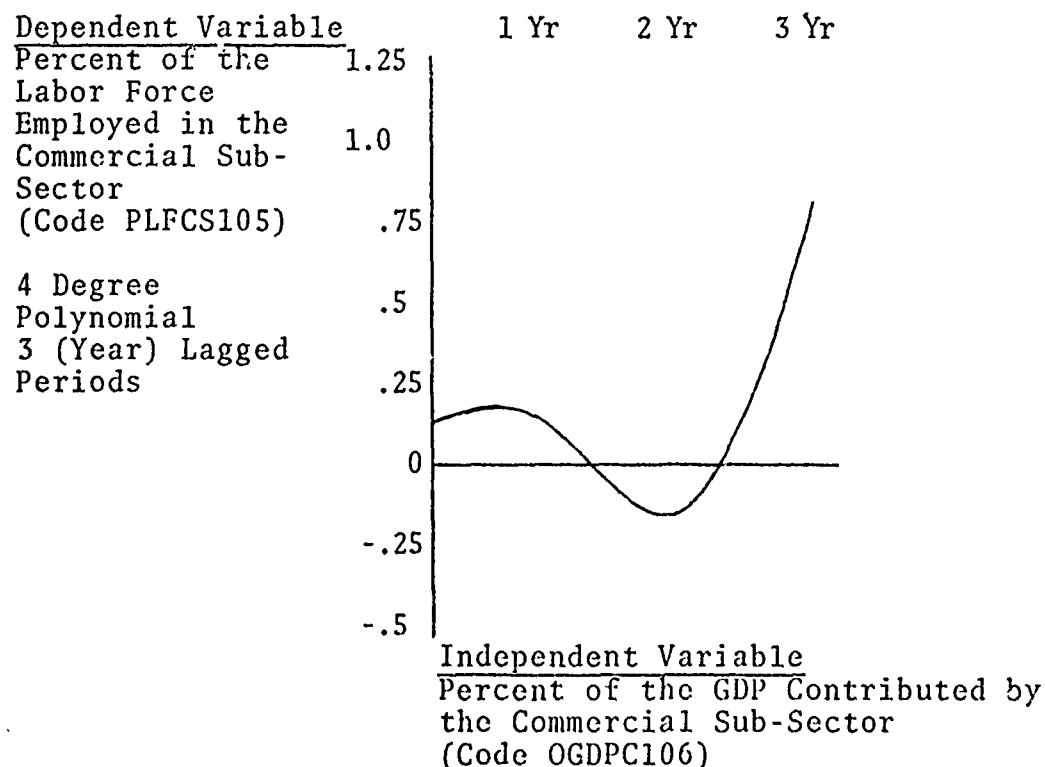


Fig. 2. Lag structures of percent of the labor force employed in the commercial sub-sector.

model. The intercept was positive and highly significant. There was an indication of multi-collinearity between the intercept and the percent of the GDP contributed by the tertiary sector, as reported by a simple correlation of -0.83 in the matrix of simple correlations for this model. This was a marginal condition resulting in a decision not to exclude the variable from the model.

An Almon lag structure was developed in which the percent of the labor force employed in the commercial sub-sector was the dependent variable, and the percent of the GDP contributed by the commercial sub-sector was the independent variable.¹⁴ A fourth degree polynomial with a three year lagged period produced the "best fit" structure. There was very little effect in the first year and a negative effect in the second year. The most significant effect occurred in the third year. This indicated that contributions to the commercial sub-sector GDP were realized in changes in the commercial sub-sector labor force in three years.

A test was also conducted to determine if significant shift parameters had become institutionalized in the percent of the labor force employed in the commercial sub-sector.¹⁵ The test revealed that only the "insurgency" period was significant, along with the percent of the GDP contributed by the tertiary sector. The correlation in the over-all model

¹⁴See Figure 2(b).

¹⁵See Table 17.

was highly significant as indicated by an F-ratio of 22.19. The R^2 Bar of .7316 indicated that 73.16 percent of the deviation in the dependent variable was explained by the independent variables. The intercept was positive and the T-ratio on the intercept was highly significant.

In order to measure the development of the essential distribution functions of marketing, it was necessary to further disaggregate indicators in the commercial sub-sector. The percent of the labor force employed in the wholesale and retail trade sub-sector was regressed against the percent of the GDP contributed by the wholesale and retail trade sub-sector in a simple regression model.¹⁶ The association between these two variables was less significant than found in the commercial sub-sector and in the total tertiary sector. The F-ratio was insignificant at the 95 percent confidence level and the R^2 Bar was relatively low at only .155. The T-ratio on the percent of the GDP contributed by the wholesale and retail trade sub-sector was marginally significant at 1.71. The intercept was positive and had a highly significant T-ratio of 51.51. The test for autocorrelation in this model was in the inconclusive range.

An Almon lag structure was developed with the percent of the labor force employed in the wholesale and retail sub-sector as the dependent variable. The percent of the GDP contributed by the tertiary sector, which was the most potent variable from the OLS multiple regression model, was used as

¹⁶ Ibid.

the independent variable.¹⁷ A fourth degree polynomial with a four year lagged period produced the "best fit" structure. There was little to no effect in the first two years, a significant negative effect in the third year and a very significant positive effect in the fourth year. This indicated that contributions to the tertiary sector GDP were realized in changes in the wholesale and retail trade sub-sector labor force in four years. /

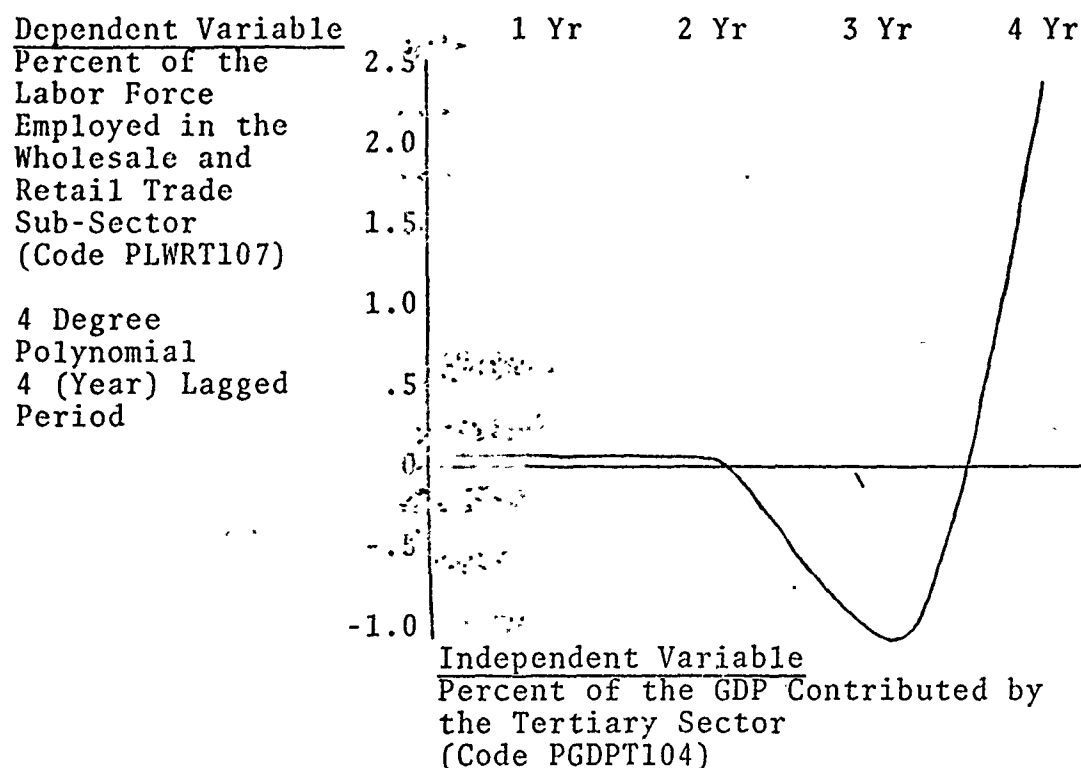
In order to test the potency of explanatory variables, the model was reconstituted and per capita GNP, GDP, percent of the GDP contributed by the tertiary sector, and percent of the GDP contributed by the commercial sub-sector were added as independent variables.¹⁸ The computation of this model revealed that only per capita GNP, percent of the GDP contributed by the tertiary sector and percent of the GDP contributed by the commercial sub-sector were significant at the 95 percent confidence level. The over-all correlation in this model was very significant with an F-ratio of 13.33, and the R^2 Bar of .7062 indicated that these independent variables explained 70.62 percent of the deviation in the dependent variable. The intercept was positive and highly significant.

The shift parameters test of the percent of the labor force employed in the wholesale and retail trade sub-sector

¹⁷See Figure 3(a).

¹⁸See Table 17.

(a)



(b)

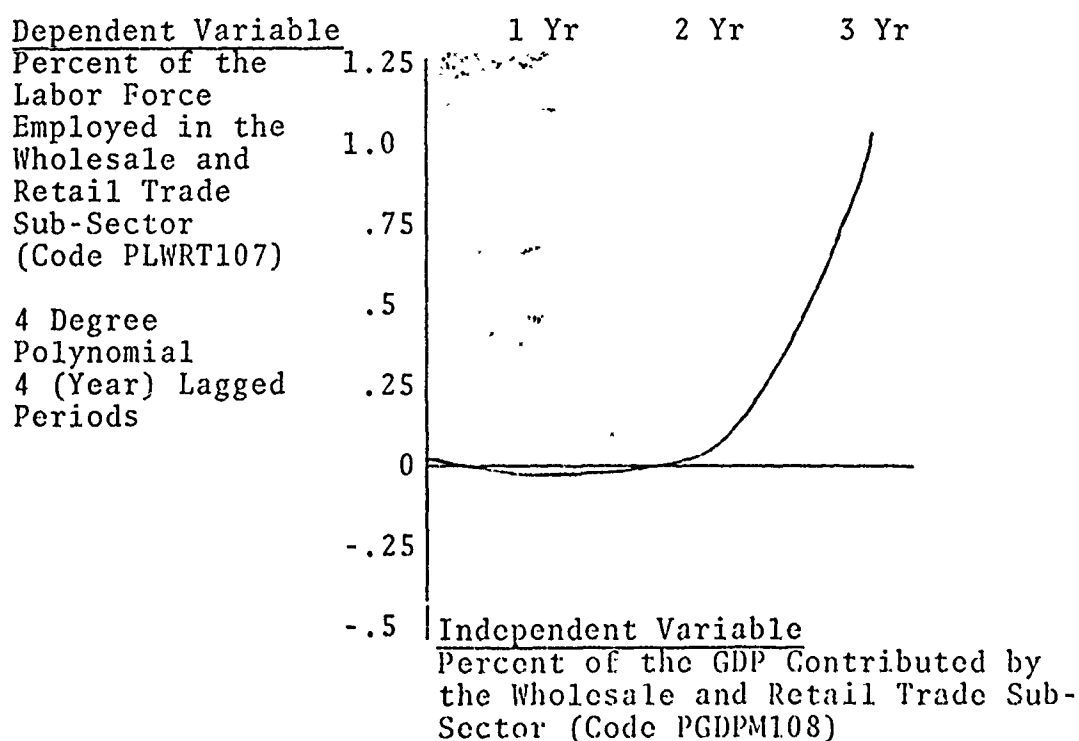


Fig. 3. Lag structures of percent of the labor force employed in the wholesale and retail trade sub-sector.

showed that only the "insurgency" period was significant.¹⁹ The over-all model was insignificant at the 95 percent confidence level based on an F-ratio of 2.978. The intercept was positive and highly significant at 48.68. The presence of autocorrelation in this model was in the inconclusive range.

An Almon lag structure was developed in which the percent of the labor force employed in the wholesale and retail trade sub-sector was the dependent variable, and the percent of the GDP contributed by the wholesale and retail sub-sector was the independent variable.²⁰ A fourth degree polynomial with a three year lagged period produced the "best fit" structure. There was little, if any, effect in the first two years, with the full impact of the effect being felt in the third year. This indicated that contributions of the wholesale and retail trade sub-sector to GDP were realized in changes in the wholesale and retail trade sub-sector labor force in three years.

Summary

National marketing development in South Vietnam, as measured by changes in the percent of the labor force employed in the tertiary sector, was more closely associated with the per capita GNP than with GDP. However, both per capita GNP and GDP were very significant explanatory variables. The "goodness of fit" of the second and third degree

¹⁹ Ibid.

²⁰ See Figure 3(b).

polynomial equation models confirmed the suggestion of Moyer that the percent of the labor force employed in the tertiary sector had a tendency to level off as higher levels of per capita GNP were reached. The lag schemes showed that the impact of per capita GNP on the tertiary labor force had its greatest effect in the second year. The lag effect of the GDP was not as immediate and occurred in the third and fourth years. The use of dummy variables to test for institutional effects indicated that the "pre-insurgency" and "limited war" periods were sensitive to per capita GNP and GDP. The tertiary labor force became institutionalized in the "insurgency" and "limited war" periods.

The disaggregation of the tertiary sector into sub-sectors of employment and national income resulted in a lower level of significance of association between sub-sector variables than variables at the sector level. The significance of the association between commercial sub-sector contributions to GDP and the percent of the labor force employed in the commercial sub-sector was weak. The percent of GDP contributed by the tertiary sector and per capita GNP were the most potent variables in explaining changes in the commercial sub-sector labor force. The lag structures revealed that the impact of the percent of the GDP contributed by the tertiary sector was felt in the fifth year in the commercial sub-sector labor force. In the case of commercial sub-sector contributions to the GDP, the lag effect in the commercial sub-sector force appeared after only

three years. Institutional effects for the commercial sub-sector labor force were found only in the "insurgency" period.

The significance of the association between the percent of labor force employed in the wholesale and retail trade sub-sector and the contribution of that sub-sector to GDP was marginal. The per capita GNP, percent of the GDP contributed by the tertiary sector, and the percent of the GDP contributed by the commercial sub-sector were more potent explanatory variables than the percent of the GDP contributed by the wholesale and retail trade sub-sector. The lag effect of the tertiary sector contributions to GDP impacted on the wholesale and retail trade sub-sector employment in the fourth year. However, the lag effect of the contributions of the wholesale and retail trade sub-sector to GDP were reflected in the corresponding sector employment in only three years. The shift parameter test in this case showed only the "insurgency" period as significant.

On balance, one can reason from this analysis that national marketing did develop over the eighteen year development period of this study, and that per capita GNP and GDP were the most potent explanatory variables. Also, there was a three to five year lag effect in realizing changes in these variables in national marketing development. The tertiary labor force became institutionalized in the "insurgency" and "limited war" periods. This effect was institutionalized in the labor force of the commercial

sub-sector and the wholesale and retail trade sub-sector only during the "insurgency" period.

The Impact of Political Violence on National Marketing Development

The impact of political violence on national marketing development in a less-developed country had not previously been measured. The measurement of this unique dimension was the major objective of this study. Prior analyses of national marketing development have utilized mainly national economic sector employment and income data. A few marketing development studies, which focused on specific regions or sectors in a country, have used social, behavioral or institutional indicators. This study extended beyond previous work in that it utilized indicators of political violence to measure the impact of this underlying dimension on national marketing development.

Employment Indicators

In the first model of this series, the significance of the association between the percent of the labor force employed in the tertiary sector and the annual cumulative political violence events index was verified by a T-ratio of 3.88.²¹ Also, the intercept was positive and very significant. The over-all correlation in the model was highly significant as indicated by an F-ratio of 15.04. The R^2 Bar was .4846 indicating that 48.46 percent of the deviation in

²¹See Table 19.

TABLE 19
THE IMPACT OF POLITICAL VIOLENCE ON AN

Dependent Variable	Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code 501) ^d	Deaths From Political Violence (Code 502)	Armed Attacks (Code 504)	Protest Demonstrations (Code 506)	Governance (Code 508)
Percent of the Labor Force Employed in the Tertiary Sector (Code PLFTS101)		17.82 ^a (14.07) ^b	- ^c	-	-	-	-
Per Capita Gross National Product (GNP) (1960 Prices) (Code PCGNP102)		15.45 (15.15)	.2800 (3.14)	.0001552 (4.92)	-	-	-
Gross Domestic Product (GDP) (Current Prices) (Code GDPCP103)		6,093 (48.30)	-	-	-	-	-
Percent of GDP Contributed by the Tertiary Sector (Code PGDPT104)		5,743 (79.45)	21.58 (3.27)	-	-	-	9.6 (4.2)
Percent of the Labor Force Employed in the Commercial Sub-Sector (Code PLFCS105)		149,700 (2.47)	-	-	-	-	-
Percent of the GDP Contributed by the Commercial Sub-Sector (Code OGDPC106)		151,700 (4.27)	-	-	46.58 (7.00)	9,670 (3.80)	-5.1 (3.1)
Percent of the Labor Force Employed in the Wholesale and Retail Trade Sub-Sector (Code PLWRT107)		52.51 (61.84)	-	-	-	-	-
Percent of the GDP Contributed by the Wholesale and Retail Trade Sub-Sector (Code PGDPM108)		51.70 (62.24)	.09601 (1.32)	.00005288 (2.06)	-	-	-
		2.277 (39.73)	-	-	-	-	-
		2.228 (39.42)	-	-.000004925 (2.15)	-	-	.001 (1.1)
		11.73 (5.73)	-	-	-	-	-
		9.281 (5.00)	-	-	.0005716 (1.76)	.2155 (2.52)	-
		2.211 (44.72)	-	-	-	-	-
		2.155 (45.68)	-	-.000005390 (2.82)	-	-	.001 (1.1)
		7.223 (5.43)	-	-	-	-	-
		5.483 (4.75)	-	-	.00005293 (2.61)	.1470 (2.77)	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model.

^dVariables have been coded for ease in computer application.

TABLE 19

VIOLENCE ON ANNUAL MARKETING DEVELOPMENT

Protest Stratations (Code 506)	Government Sanctions (Code 519)	Cumulative Political Violence Events Index (Code ACPVIND)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	T-Ratio 95% Confidence	RHO	Durbin- Watson
-	-	.0001327 (3.88)	.4846	.4846	15.043	1.746	4.490	.529	.941
-	-	-	.6868	.6672	16.444	1.753	3.680	.343	1.352
-	-	.006660 (1.95)	.1928	.1928	3.821	1.746	4.490	.658	.700
-	9.619 (4.69)	-	.7516	.7361	22.692	1.753	3.680	.254	1.538
-	-	4.157 (2.54)	.2874	.2874	6.452	1.746	4.490	.685	.662
.670 (3.80)	-5.143 (3.36)	-	.7882	.7599	17.364	1.761	3.340	.131	2.268
-	-	.00004517 (1.97)	.1952	.1952	3.880	1.746	4.490	.418	1.206
-	-	-	.2779	.2328	2.887	1.753	3.680	.551	.865
-	-	.000002722 (1.76)	.1620	.1620	3.092	1.746	4.490	.466	1.090
-	.002523 (1.25)	-	.2366	.1889	2.325	1.753	3.680	.451	1.129
-	-	.0001050 (1.90)	.1840	.1840	3.607	1.746	4.490	.615	.741
.2155 (2.52)	-	-	.3729	.3337	4.460	1.753	3.680	.407	1.207
-	-	-.000002957 (2.21)	.2346	.2346	4.903	1.746	4.490	.344	1.359
-	.002834 (1.68)	-	.3469	.3061	3.984	1.753	3.680	.292	1.475
-	-	.00008445 (2.35)	.2566	.2566	5.522	1.746	4.490	.546	.898
.1470 (2.77)	-	-	.4753	.4425	6.795	1.753	3.680	.255	1.538

Processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360

Included in the model are indicated by - .

2

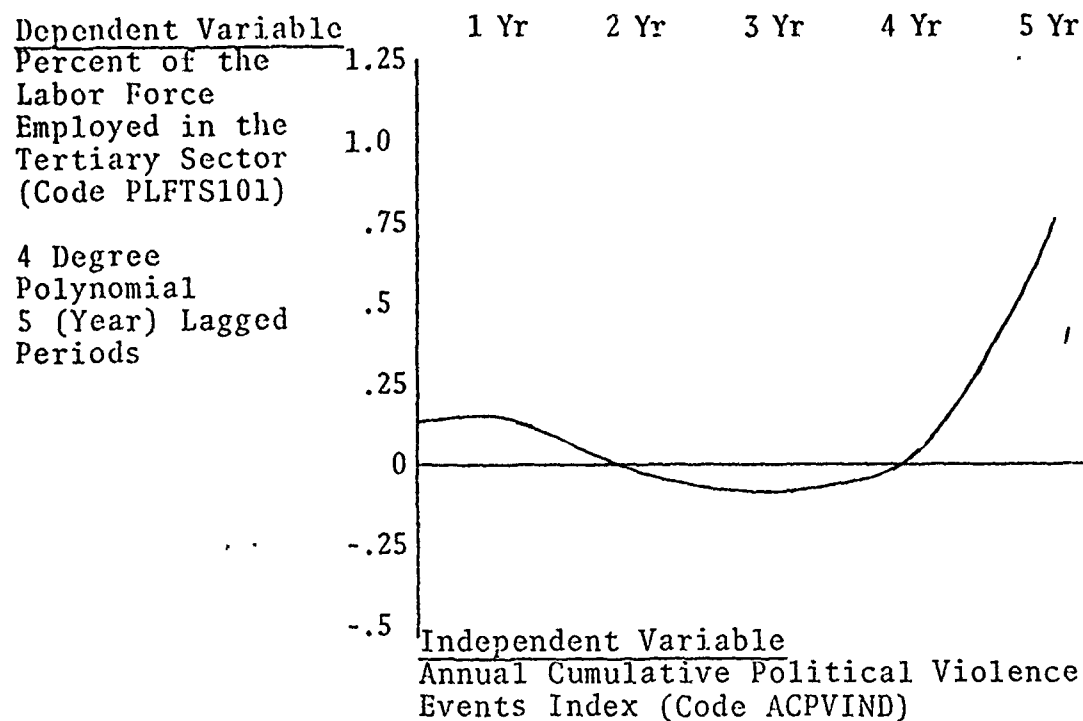
the dependent variable was explained by the independent variable. The test for autocorrelation in this model was near the inconclusive range. The model was reconstructed utilizing the five basic political violence indicators as independent variables. Two of these variables, riots and deaths from political violence, were significant at the 95 percent confidence level. The over-all correlation improved in this model with an F-ratio of 16.44 and an R^2 Bar of .6672. Again, the intercept was positive and very significant. The test for autocorrelation in this model was in the inconclusive range. These tests showed a positive significance between increases in the tertiary sector labor force and these indicators of political violence.

Two Almon lag structures were developed in which the percent of the labor force employed in the tertiary sector was the dependent variable. The annual cumulative political violence events index²² and riots²³ were used alternately as the independent variable. The "best fit" lag structure for the first model was a fourth degree polynomial with a five year lagged period. There was a slight effect in the first year, no effect in the second year, and a slight negative effect in the third and fourth years. The significant effect was in the fifth year. This indicated that the impact of the annual cumulative political violence events index was realized in changes in the tertiary sector labor force in

²²See Figure 4(a).

²³See Figure 4(b).

(a)



(b)

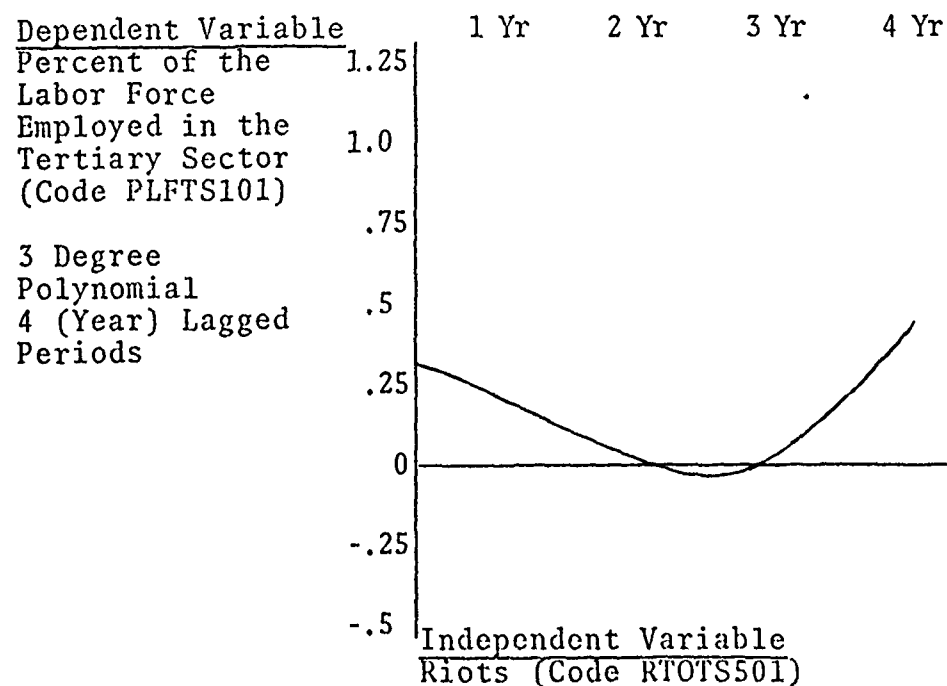


Fig. 4. Lag structures of percent of the labor force employed in the tertiary sector.

five years. The "best fit" of the second lag structure was a third degree polynomial with a four year lagged period. There was a positive intercept and a slight effect in the first year and a minimum effect in the second and third years. The major effect was in the fourth year. This structure indicated that the impact of riots on tertiary sector labor force was realized in four years.

The next model used the percent of the labor force employed in the commercial sub-sector as the dependent variable, and the annual cumulative political violence events index and the five basic indicators of political violence as the independent variables.²⁴ The annual cumulative political violence events index was significant with a T-ratio of 1.76, but the over-all model correlation was marginal as reflected by an insignificant F-ratio of 3.09 and an R^2 Bar of .1620. The intercept was positive and highly significant. The presence of autocorrelation conditions was in the inconclusive range. In the model utilizing the five basic political violence variables, only one variable, deaths from political violence, was significant. Again, the over-all model correlation was not significant as indicated by an F-ratio of 2.325 and an R^2 Bar of .1889. Also, autocorrelation conditions were in the inconclusive range.

Two Almon lag structures were also developed for the commercial sub-sector which used the percent of the labor force employed in the commercial sub-sector as the dependent

²⁴See Table 19.

variable and the annual cumulative political violence events index²⁵ and deaths from political violence²⁶ alternately as the independent variables. The "best fit" structure for the first model was a fourth degree polynomial with a five year lagged period. There was little, if any, impact in this model until the fifth year. This indicated that the impact of the annual cumulative political violence events index was not significant until the fifth year. The "best fit" structure for the second model was also a fourth degree polynomial with a five year lagged period. There was a slight effect in the first year, no effect in the second year, a slight negative effect in the third and fourth years, and a significant positive effect in the fifth year.

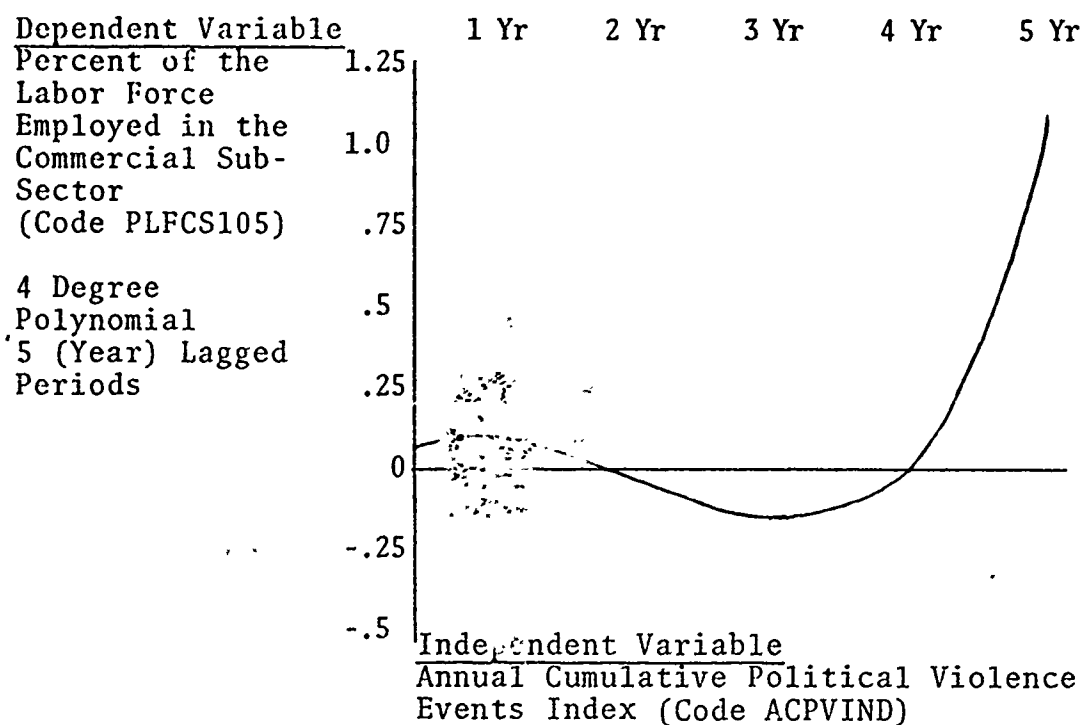
Two multiple regression models were also constructed using the percent of the wholesale and retail trade sub-sector as the dependent variable and the annual cumulative political violence events index and the five basic political violence indicators alternately as the independent variables.²⁷ The annual cumulative political violence events index model was significant with a T-ratio of 2.21 and the intercept was positive and highly significant. The over-all model was significant as indicated by an F-ratio of 4.90 and an R^2 Bar of .2346. Autocorrelation in this model was in the inconclusive range. In the model utilizing the five

²⁵See Figure 5(a).

²⁶See Figure 5(b).

²⁷See Table 19.

(a)



(b)

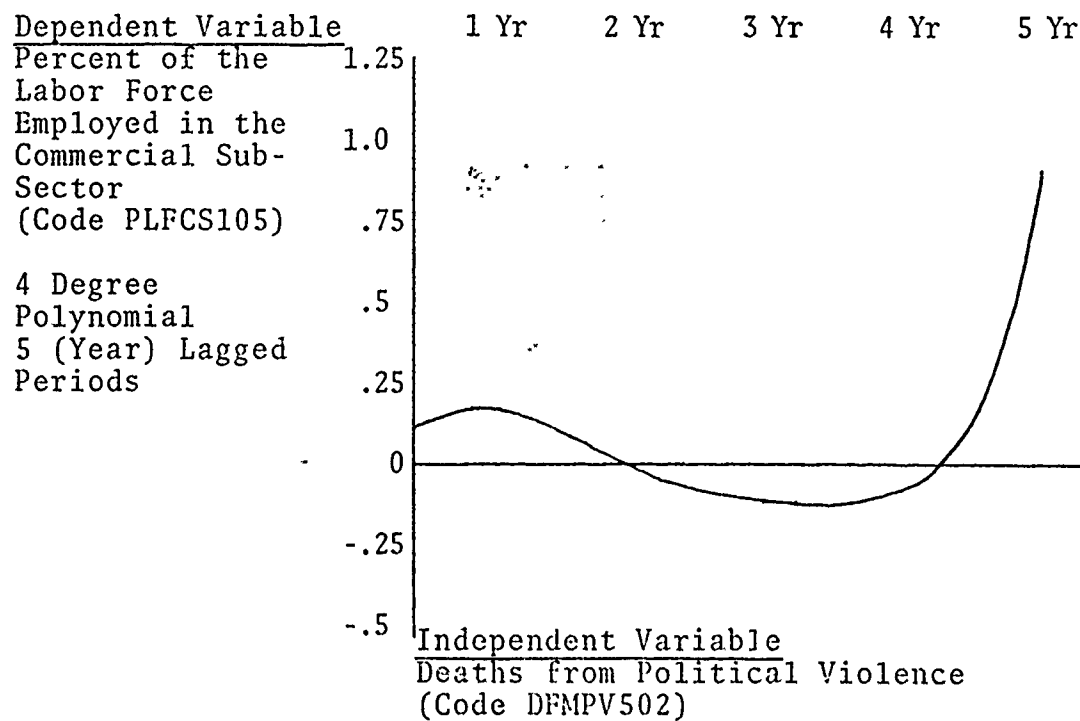


Fig. 5. Lag structures of percent of the GDP contributed by the commercial sub-sector.

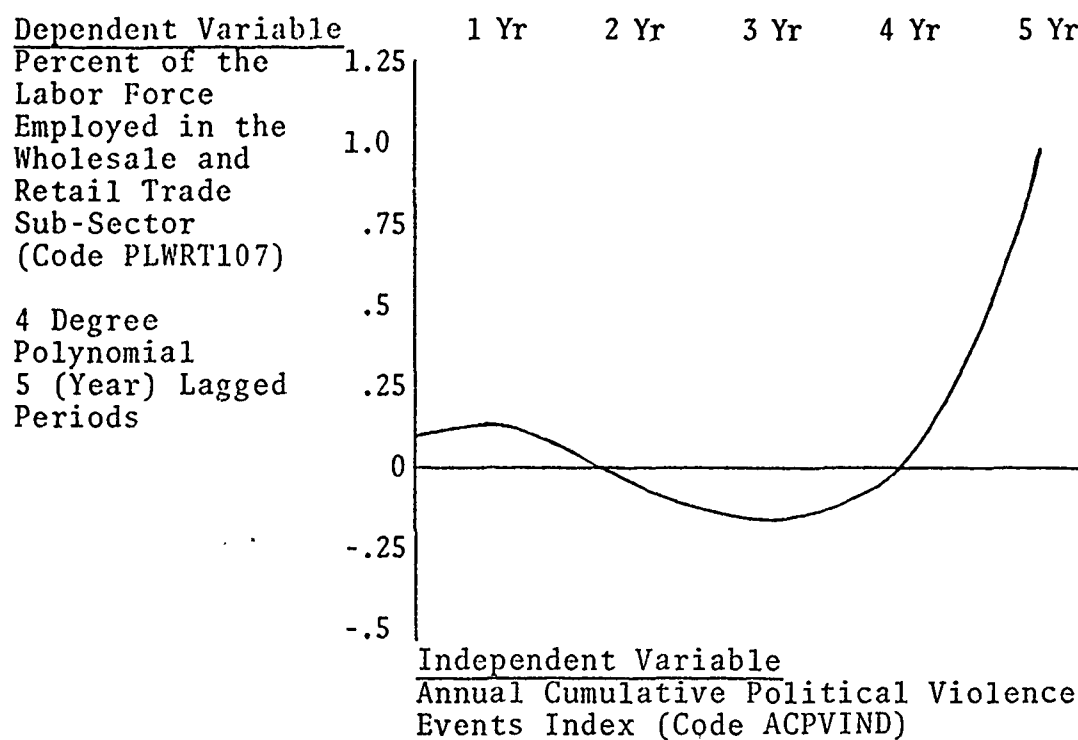
basic indicators of political violence, only the deaths from political violence variable was significant at the 95 percent confidence level. The government sanctions variable was marginally significant with a T-ratio of 1.68 (1.753 was required for significance). The over-all correlation of this model was significant with an F-ratio of 3.98 and the R^2 Bar was .3061. Autocorrelation conditions in the model were in the inconclusive range.

Two Almon lag structures were developed using the percent of the labor force employed in the wholesale and retail trade sub-sector as the dependent variable. The annual cumulative political violence events index²⁸ and deaths from political violence²⁹ were used as the independent variable. The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The model using the annual cumulative political violence events index showed some impact in the first year, no impact in the second year, slight negative impact in the third and fourth years, and significant impact in the fifth year. This indicated that the impact of the annual cumulative political violence events index was not significant until the fifth year. The second model using deaths from political violence as the independent variable showed a slight effect in the first year, no effect in the second year, slight negative effect in the third and fourth years, and a positive significant

²⁸See Figure 6(a).

²⁹See Figure 6(b).

(a)



(b)

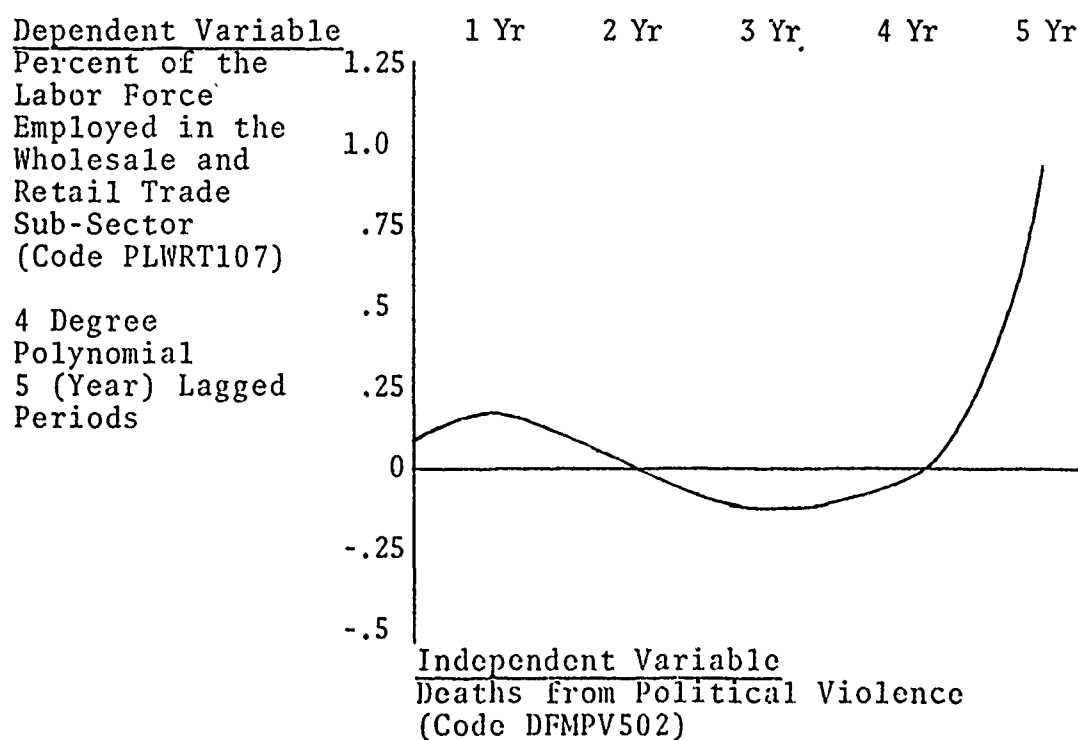


Fig. 6. Lag structures of percent of the labor force employed in the wholesale and retail trade sub-sector.

effect in the fifth year. This again indicated that the impact of deaths from political violence was not significant until the fifth year.

National Income Indicators

The association between tertiary sector and sub-sector contributions to the GDP and indicators of political violence was also important in measuring the impact of political violence on marketing development.

The first model in this series was constructed using the percent of the GDP contributed by the tertiary sector as the dependent variable and the annual cumulative political violence events index as the independent variable. The intercept in this model was positive and highly significant. Also, the annual cumulative political violence events index was significant as indicated by a T-ratio of 1.97.³⁰ However, the over-all model correlation was insignificant and the test for autocorrelation was in the inconclusive range. In the model employing the basic political violence indicators, only the deaths from political violence variable was significant. The intercept of this model was positive and highly significant. Again, the over-all model's correlation was insignificant. The test for autocorrelation was in the inconclusive range.

Two Almon lag structures were developed using the percent of the GDP contributed by the tertiary sector as the

³⁰ See Table 19.

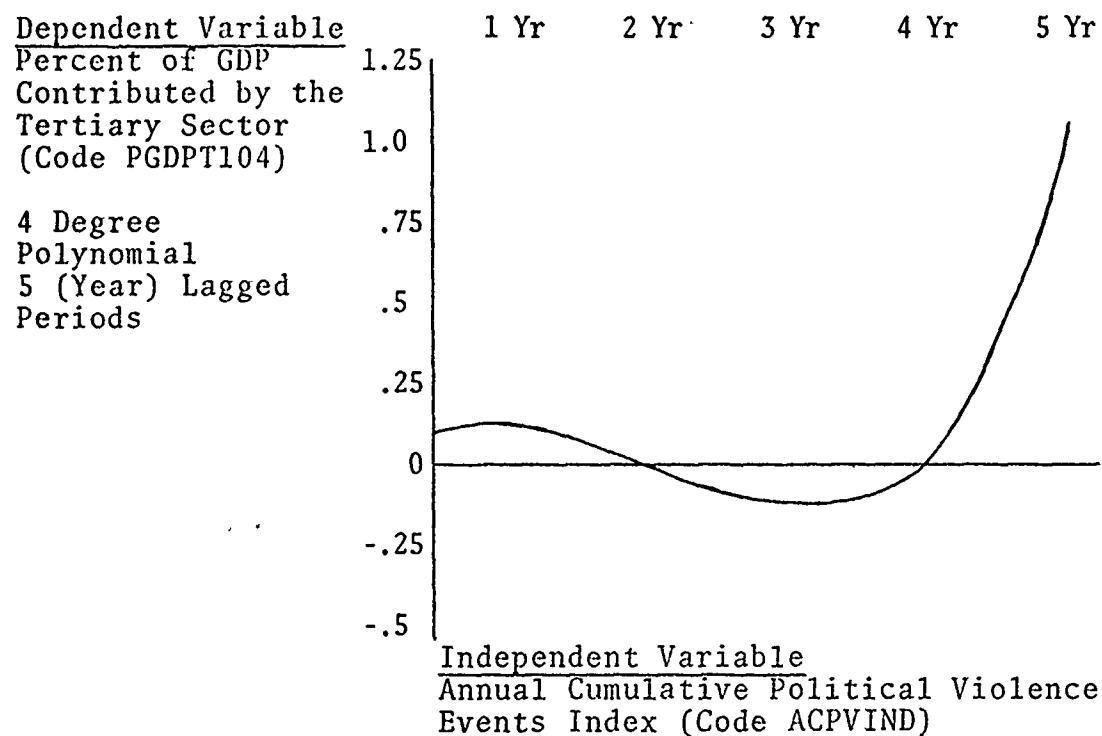
dependent variable and the annual cumulative political violence events index and deaths from political violence were alternately used as the independent variable.³¹ The "best fit" structure for the first model was a fourth degree polynomial with a five year lagged period. There was a slight effect in the first year, no effect in the second year, a slight effect in the third and fourth years, and significant effect in the fifth year. This indicated that the impact of the annual cumulative political violence events index was not reflected in changes in the tertiary sector contributions to GDP until the fifth year. The "best fit" structure for the second model was also a fourth degree polynomial with a five year lagged period. This lag structure exhibited the same character as the first model, indicating that the impact of deaths from political violence was not reflected in the tertiary sector contributions to the GDP until the fifth year.

The association between the percent of the GDP contributed by the commercial sub-sector and the indicators of political violence continued to be significant at the 95 percent confidence level.³² The annual cumulative political violence events index exhibited a T-ratio of 1.90 and the intercept of this model was positive and significant. However, the over-all correlation of this model was not significant and there was positive autocorrelation in the

³¹See Figure 7(a) and 7(b).

³²See Table 19.

(a)



(b)

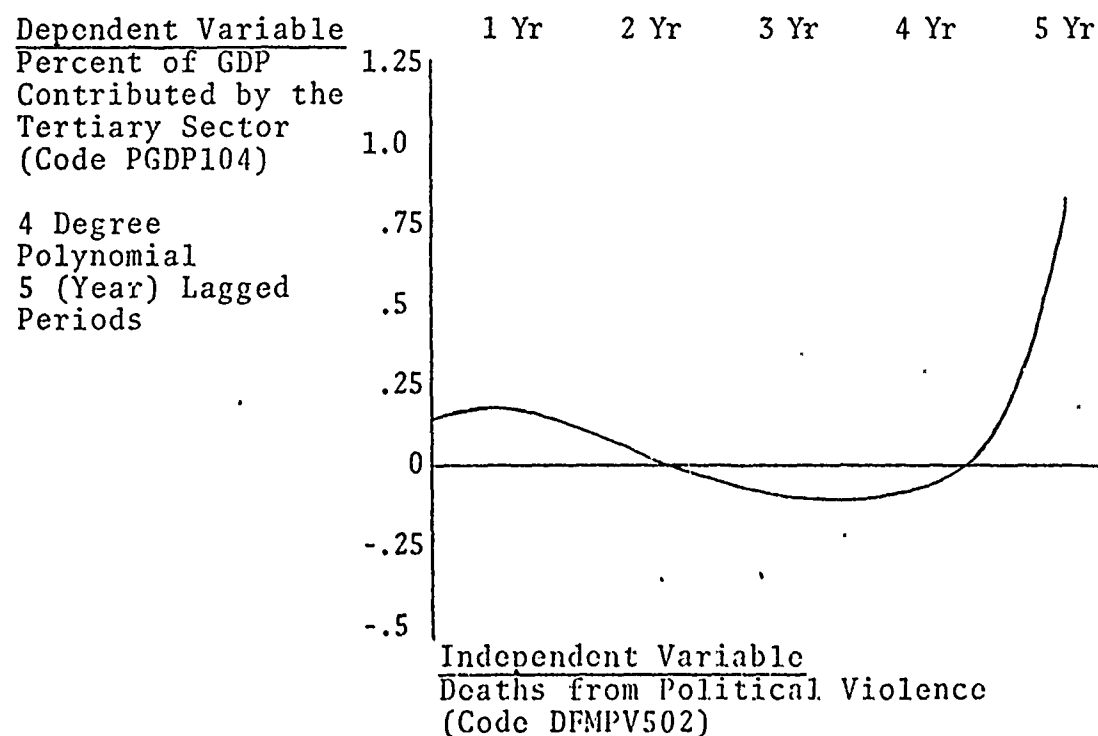


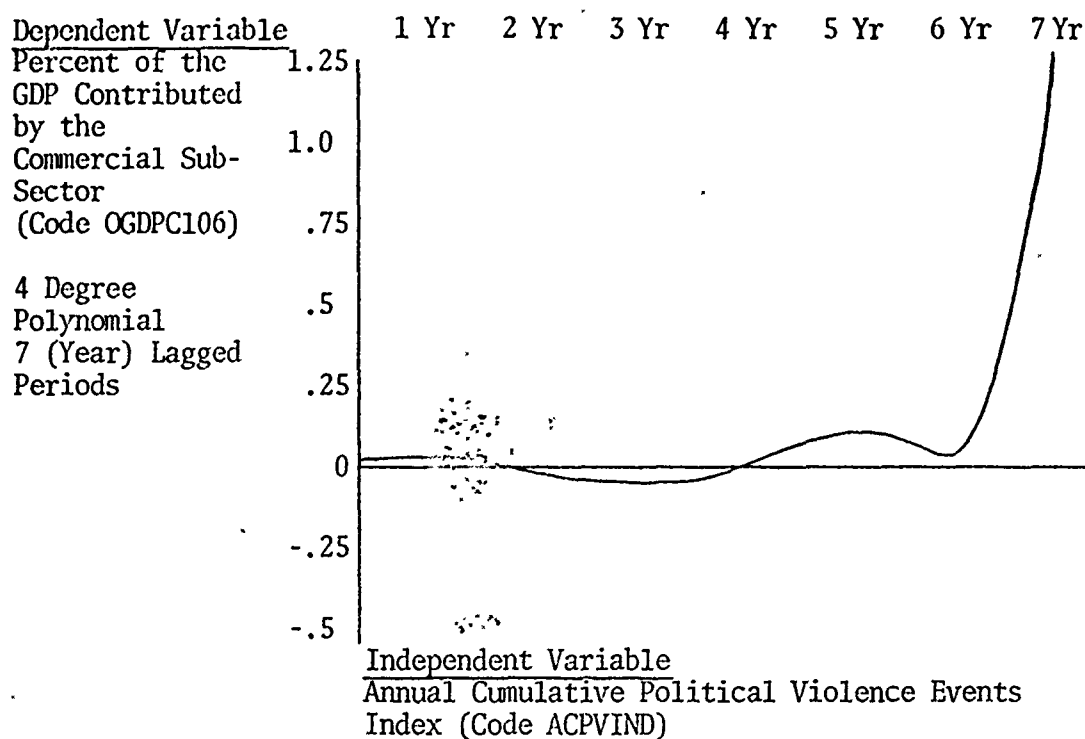
Fig. 7. Lag structures of percent of GDP contributed by the tertiary sector.

model. In the model containing separate political violence indicators, the significant indicators were armed attacks and protest demonstrations. The over-all correlation in this model was significant. The model intercept was positive and significant. The test for autocorrelation in this model was in the inconclusive range.

Two Almon lag structures were also developed for the commercial sub-sector. The percent of the GDP contributed by the commercial sub-sector was used as the dependent variable. The annual cumulative political violence events index and protest demonstrations were used alternately as the independent variable.³³ The "best fit" structure for the first model was a fourth degree polynomial with a seven year lagged period. There was no effect in the first year, a slight negative effect in the second year, no effect in the third year, slight positive effects in the fourth and fifth years, negligible effect in the sixth year and the significant effect was in the seventh year. The impact of the annual cumulative political violence events index on GDP contributions of the commercial sub-sector was not realized until the seventh year. The "best fit" structure for the second model was a fourth degree polynomial with a five year lagged period. This structure reflected some effect in the first year and a general dampening of the effect over the remainder of the lagged period. The lagged effect of protest

³³See Figure 8(a) and 8(b).

(a)



(b)

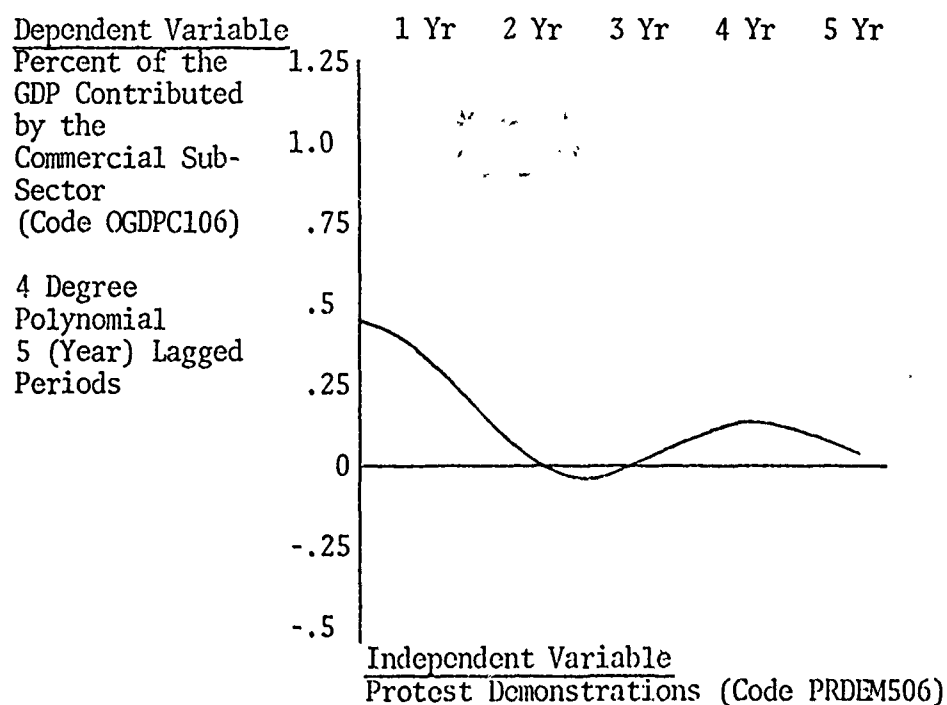


Fig. 8. Lag structures of percent of the GDP contributed by the commercial sub-sector.

demonstrations on GDP contributions of the commercial sub-sector was very weak.

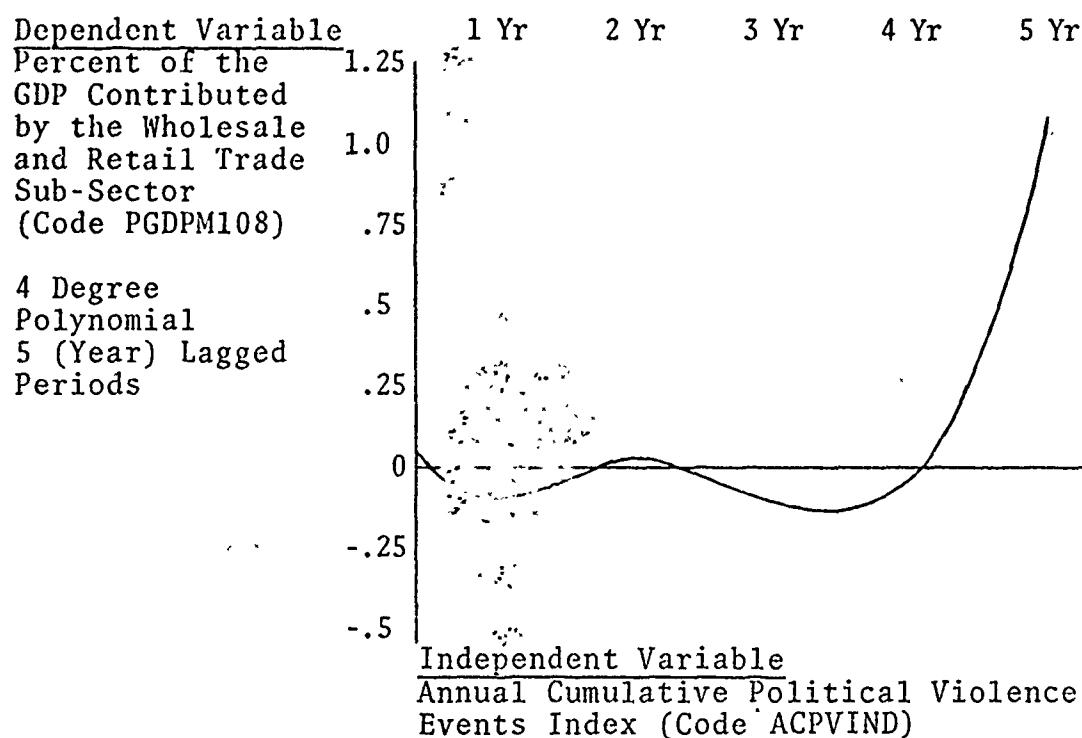
The percent of the GDP contributed by the wholesale and retail trade sub-sector was regressed against the annual cumulative political violence events index and resulted in a significant association.³⁴ The T-ratio was 2.35 and the over-all correlation of the model was significant as indicated by an F-ratio of 5.522. The model intercept was positive and significant at the 95 percent confidence level. There was positive autocorrelation in this model. The model utilizing individual political violence indicators resulted in armed attacks and protest demonstrations as significant variables. The over-all model was significant with an F-ratio of 6.79 and an R^2 Bar of .4425. The model intercept was positive and significant.

Following the same scheme, two Almon lag structures were developed using the percent of the GDP contributed by the wholesale and retail trade sub-sector as the dependent variable. The annual cumulative political violence events index and protest demonstrations were used alternately as the independent variable.³⁵ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The behavior of the first structure showed a negative effect in the first year, no effect in the second year, a negative effect in the third year, no effect in the

³⁴See Table 19.

³⁵See Figure 9(a) and 9(b).

(a)



(b)

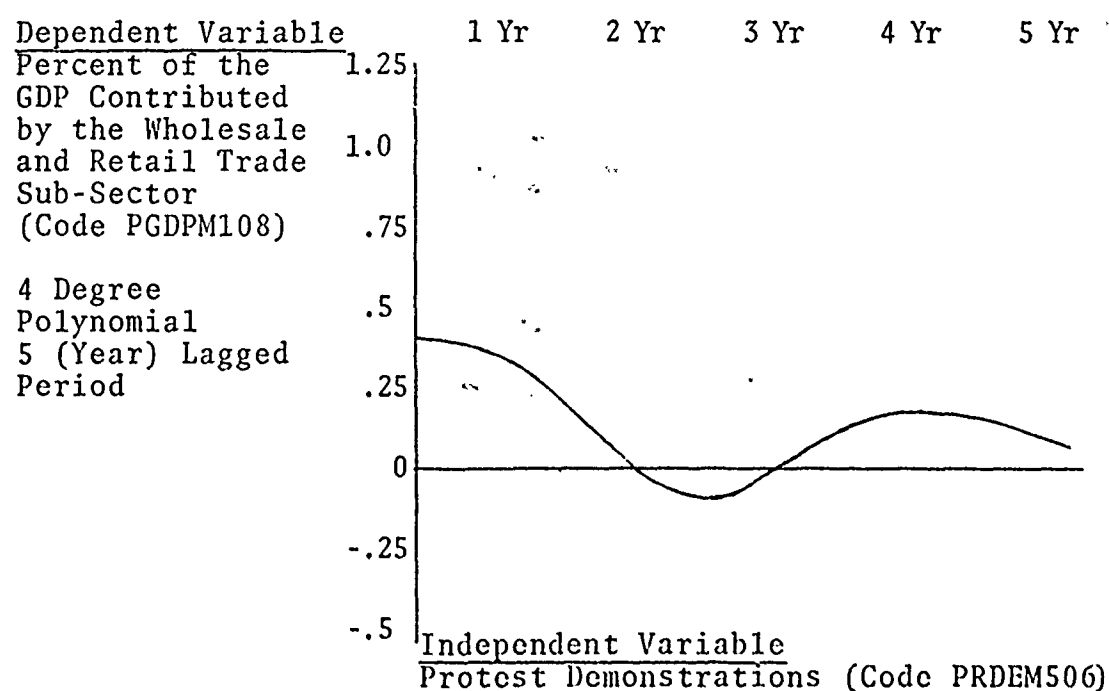


Fig. 9. Lag structures of percent of the GDP contributed by the wholesale and retail trade sub-sector.

fourth year and a significant effect in the fifth year. This indicated that the impact of the annual cumulative political violence events index was not reflected in the GDP contribution of the wholesale and retail trade sub-sector until the fifth year. The lag structure in the second model showed some effect in the first year, no effect in the second and third years and slight effects in the fourth and fifth years. The significance of the impact of protest demonstrations on the dependent variable was weak.

The per capita GNP and the GDP were regressed against the indicators of political violence to determine the significance of their impact on economic growth.

The GNP as the dependent variable was first regressed in a model utilizing the annual cumulative political violence events index as the independent variable.³⁶ The intercept of this model was positive and highly significant. The T-ratio on the annual cumulative political violence events index was also significant at 1.95. The correlation in the over-all model was insignificant and the R^2 Bar was low at .1928. There was also positive autocorrelation in this model. The significance of the association between per capita GNP and the individual political violence indicators was much stronger³⁷ as exemplified by a T-ratio for riots of 3.27 and government sanctions of 4.69. Also, the over-all correlation of this model was highly significant with an

³⁶See Table 19.

³⁷Ibid.

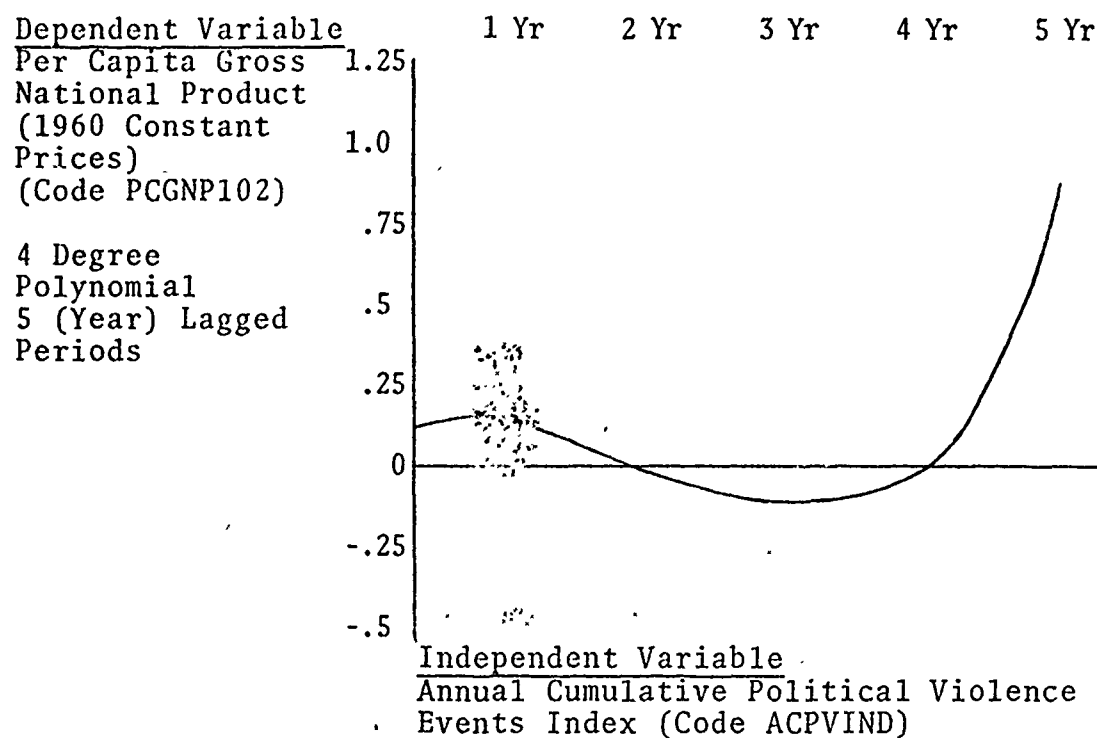
F-ratio of 22.69. The R^2 Bar was .7361 indicating that 73.61 percent of the deviation in the dependent variable was explained by riots and government sanctions. The intercept was also positive and highly significant. The test for autocorrelation was in the inconclusive range.

Two Almon lag structures were developed for this indicator of economic growth. Per capita GNP was used as the dependent variable and the annual cumulative political violence events index and government sanctions were used alternately as the independent variable.³⁸ The "best fit" structure for the first model was a fourth degree polynomial with a five year lagged period. There was a slight effect in the first year, no effect in the second year and a slight negative effect in the third and fourth years, and the significant impact was in the fifth year. This meant that the impact of the annual cumulative political violence events index was not reflected in per capita GNP until the fifth year. The "best fit" structure for the second model was a third degree polynomial with a five year lagged period. There was a decreasing effect in the first year, no effect in the second through the fourth years and a slight effect in the fifth year. The significance of the impact of government sanctions on the per capita GNP was weak.

The significance of the association between GDP and the impact of political violence was also measured. The model utilizing GDP as the dependent variable and the annual

³⁸See Figure 10(a) and 10(b).

(a)



(b)

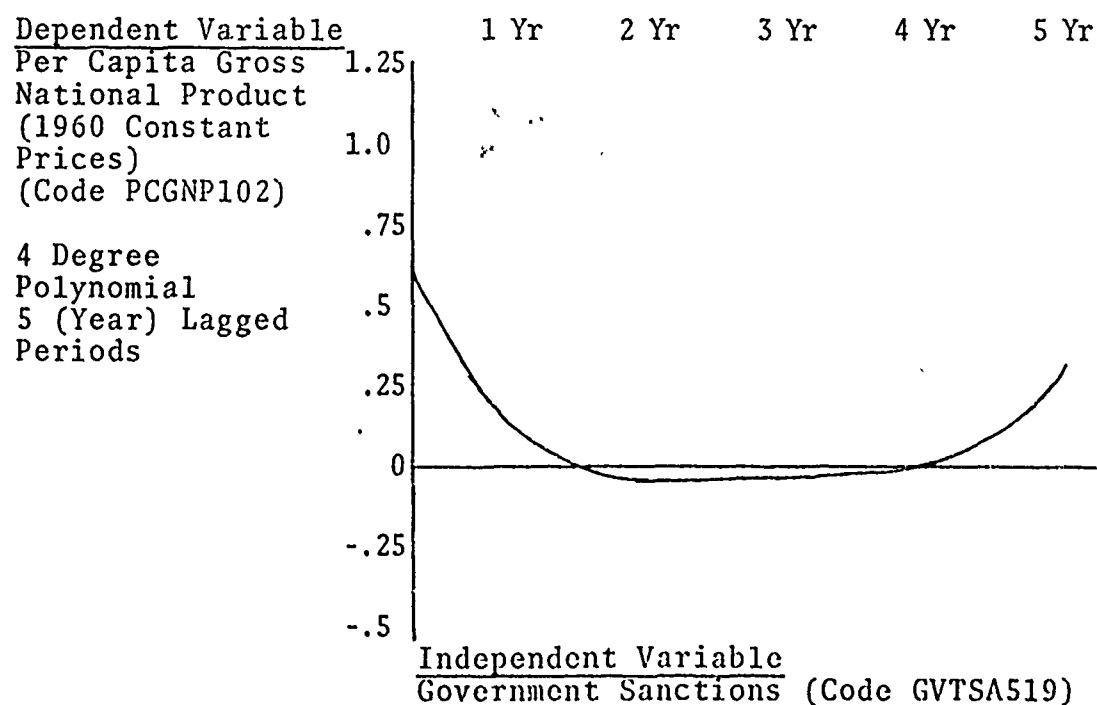


Fig. 10. Lag structures of per capita Gross National Product (1960 constant prices).

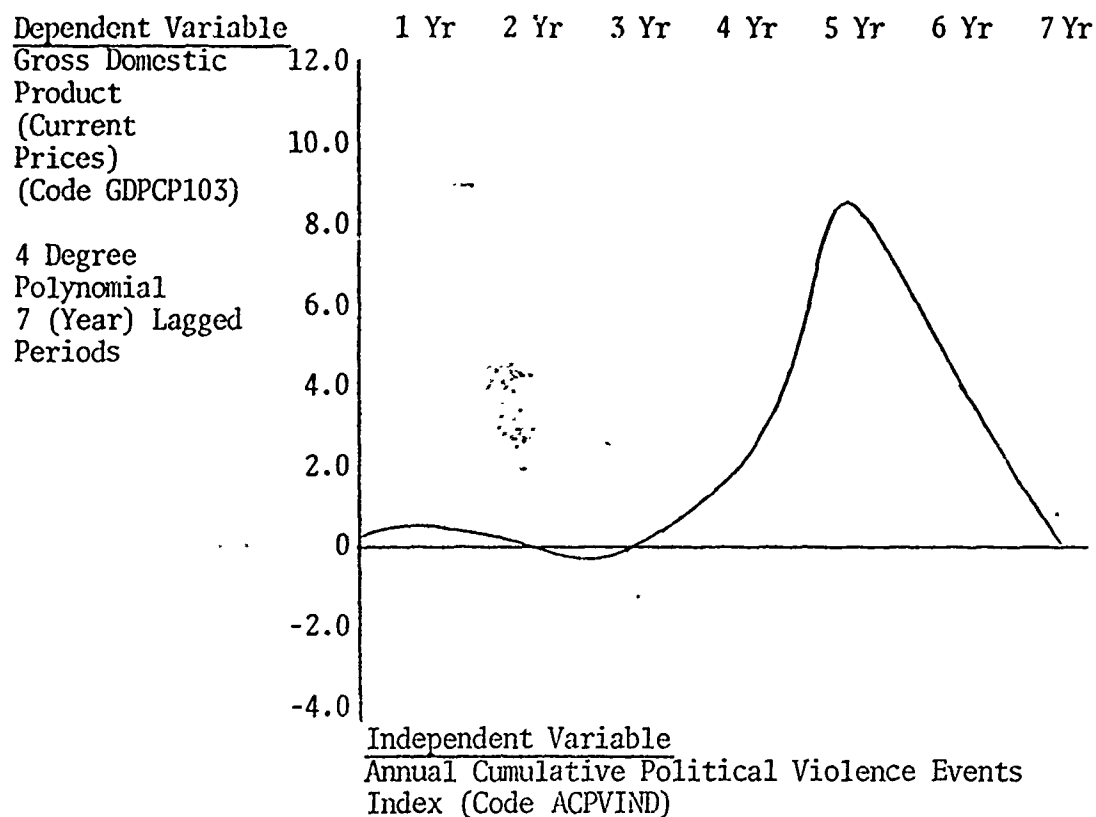
cumulative political violence events index as the independent variable³⁹ was reflected in a T-ratio of 2.45. Also, the intercept in this model was positive and significant. The over-all model was significant and the R^2 Bar was .2874. There was positive autocorrelation in this model. The model utilizing individual political violence indicators as the independent variables considerably improved the significance of the association between these variables and the GDP. The significant variables in this model were armed attacks, protest demonstrations, and government sanctions. The correlation in the over-all model was very significant and the R^2 Bar was .7882 indicating that 78.82 percent of the deviation in the dependent variable was explained by these independent variables.

Two Almon lag structures were developed for the domestic indicator of economic growth. The GDP was used as the dependent variable and alternatively the annual cumulative political violence events index and armed attacks were used as the independent variable.⁴⁰ The "best fit" structure for the first model was a fourth degree polynomial with a seven year lagged period. There was a slight effect in the first year, no effect in the second and third years, a significant increasing effect during the third, fourth and fifth years, and a significant decreasing effect during the sixth and seventh years. This indicated that the impact of the annual

³⁹See Table 19.

⁴⁰See Figure 11(a) and 11(b).

(a)



(b)

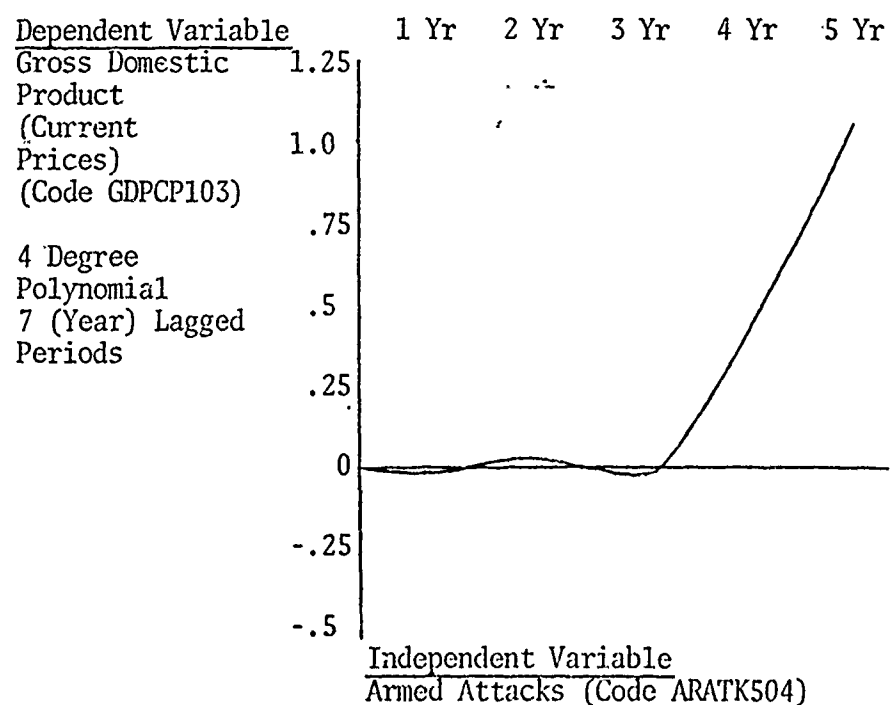


Fig. 11. Lag structures of Gross Domestic Product (current prices).

cumulative political violence events index was realized during the third through the fifth years. The "best fit" structure for the second model was a fourth degree polynomial with a five year lagged period. There was no effect until the fifth year, which indicated that the impact of armed attacks on GDP was not realized until the fifth year.

Institutional Effects and Structural Changes

Intercept and slope dummy variables were generated to aid in determining if shift parameters were present and had become institutionalized in the data. It was also necessary to determine if structural changes had taken place in the independent political violence variables.

Employment Models

The first model using dummy variables was constructed with the percent of the labor force employed in the tertiary sector as the dependent variable and dummy variables which represented the annual cumulative political violence events index in the three political violence time periods as the independent variables. Dummy intercept variables were used to provide separation of the three important political violence time periods.⁴¹ In this first model, all the intercepts were positive and significant. The intercept dummies were very significant during the "pre-insurgency" and "limited war" periods as reflected in T-ratios of 16.18 and

⁴¹See Table 20.

TABLE 20
THE IMPACT OF POLITICAL VIOLENCE ON ANNUAL MARKETING DEVELOPMENT

Dependent Variable	Independent Variable(s)	Institutional Effects (Shift Parameters) ^a			Structural Changes (Slope Changes) ^f											
		Intercept (Regression Coefficient)(T-Ratio)			Riots (Code 501)			Deaths From Political Violence (Code 502)			Armed Attacks (Code 504)			Protest Demonstrations (Code 505)		
		DUMMY0 ^d 1955-60	DUMMY1 1961-64	DUMMY2 1965-72	RDUMMY0 1955-60	RDUMMY1 1961-64	RDUMMY2 1965-72	DDUMMY0 1955-60	DDUMMY1 1961-64	DDUMMY2 1965-72	ADUMMY0 1955-60	ADUMMY1 1961-64	ADUMMY2 1965-72	PDUMMY0 1955-60	PDUMMY1 1961-64	PDUMMY2 1965-72
Percent of the Labor Force Employed in the Tertiary Sector (Code PLFTS101)		13.10 ^a (16.18) ^b	11.72 (2.69)	24.49 (40.62)	- ^c	-	-	-	-	-	-	-	-	-	-	-
Per Capita Gross National Product (GNP) (1960 Prices) (Code PCGNP102)		5.654 (45.82)	4.790 (7.24)	6.918 (36.93)	-	-	-	-	-	-	-	-	-	-	-	-
Gross Domestic Product (GDP) (Current Prices) (Code GDGDP103)		5.654 (53.65)	5.995 (37.88)	6.445 (39.90)	-	23.52 (3.02)	-	-	-	-	-	-	-	-	-	-
Percent of the GDP Contributed by the Tertiary Sector (Code PGDPT104)		50.43 (21.52)	50.55 (29.14)	55.82 (45.50)	-	-	-	-	-	-	-	-	-	-	-	8.330 (3.40)
Percent of the Labor Force Employed in the Commercial Sub-Sector (Code PLFCS105)		50.66 (21.77)	50.55 (28.90)	55.82 (45.14)	-	-	-	.00296 (1.26)	-	-	-	-	-	-	-	-
Percent of the GDP Contributed by the Commercial Sub-Sector (Code PGDCP106)		2.57 (23.79)	2.475 (21.53)	2.218 (15.55)	-	-	-	-	-	-.000002350 (.97)	-	-	-	-	-	-
Percent of the Labor Force Employed in the Wholesale and Retail Trade Sub-Sector (Code PLWRT107)		2.167 (23.03)	2.475 (21.48)	2.216 (15.36)	-	-	-	-	-	-	.01939 (1.80)	-	-	-9.246 (1.68)	-	-
Percent of the GDP Contributed by the Wholesale and Retail Trade Sub-Sector (Code PGDPMT108)		21.37 (17.00)	19.67 (21.14)	20.41 (31.02)	-	-	-	-	-	-	-	-	-	-	-	-
		21.16 (20.80)	19.67 (22.13)	20.41 (32.46)	-	-	-	-	-	-	-	-	-	-	-	-
		2.133 (26.09)	2.375 (23.71)	2.124 (17.78)	-	-	-	-	-	-	-	-	-	-	-	-
		2.133 (25.92)	2.375 (23.56)	2.117 (16.78)	-	-	-	-	-	-.000002130 (1.01)	-	-	-	-	-	-
		10.95 (16.34)	11.35 (13.99)	14.82 (14.72)	-	-	-	-	-	-	-	-	-	-	-	-
		10.95 (16.95)	11.35 (14.35)	15.82 (18.15)	-	-	-	-	-	-	-	.00007949 (1.01)	-	-	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LSTAT) software computer package in an IBM-360.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

^eIntercept dummy variables have been generated to detect shift parameters between the three time periods of the study.

^fSlope dummy variables have been generated to detect slope changes between the three time periods of the study.

TABLE 20

POLITICAL VIOLENCE ON ANNUAL MARKETING DEVELOPMENT

										R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson	
504 (Code 504)	506 (Protest Demonstrations (Code 506))			519 (Government Sanctions (Code 519))			Cumulative Political Violence Events Index (Code CPVIND)										
ADUMY1 1964	ADUMY2 1965-72	PDUMY0 1955-60	PDUMY1 1961-64	PDUMY2 1965-72	GDUMY0 1955-60	GDUMY1 1961-64	GDUMY2 1965-72	ZODUMY0 1955-60	ZIDUMY1 1961-64	Z2DUMY2 1965-72							
-	-	-	-	-	-	-	-	-	.001353 (1.79)	-	.9429	.9307	53.698	1.771	3.180	-.012	2.077
-	-	-	-	-	-	.08681 (2.05)	-.02695 (1.69)	-	-	-	.9552	.9415	51.217	1.782	3.110	-.552	3.247
-	-	-	-	-	-	-	-	-	.2646 (2.30)	-.003364 (1.22)	.8075	.7482	10.066	1.782	3.110	.512	.978
-	-	-	-	-	-	-	4.817 (2.14)	-	-	-	.8592	.8157	14.641	1.782	3.110	-.205	1.987
-	-	-	-	-	-	-	-	-	-	.3843 (.18)	.4738	.4409	10.529	1.753	3.680	.857	.470
-	-	-	-	8.330 (3.40)	-	-	-.006401 (5.40)	-	-	-	.8927	.8698	35.077	1.771	3.180	.555	.899
-	-	-	-	-	-	-	-	.003106 (1.37)	-	-	.3934	.2634	2.108	1.771	3.180	.130	1.888
-	-	-	-	-	-	-	-	-	-	-	.3836	.2516	2.023	1.771	3.180	.137	1.890
-	-	-	-	-	-	-	-	-	-	-.000002117 (1.01)	.3918	.2615	2.094	1.771	3.180	.238	1.649
-	-	-	-	-	-	-	-	-	-	-	.3886	.2576	2.066	1.771	3.180	.242	1.641
-	-	-	-	-	-	-	-	.001355 (1.12)	-	-	.3768	.2432	1.965	1.771	3.180	.111	1.875
-	-	.9.246 (1.68)	-	-	-	-	-	-	-	-	.4748	.3132	2.169	1.782	3.110	.125	1.746
-	-	-	-	-	-	-	-	-	-	-.000001996 (1.09)	.4330	.3115	2.482	1.771	3.180	.160	1.759
-	-	-	-	-	-	-	-	-	-	-	.4258	.3027	2.410	1.771	3.180	.171	1.734
-	-	-	-	-	-	-	-	-	-	-.000008637 (.58)	.5817	.4921	4.520	1.771	3.180	.234	1.416
.00007949 (1.01)	-	-	-	-	-	-	-	-	-	-	.6020	.5167	4.915	1.771	3.180	.048	1.893

AT) software computer package in an IBM-360 computer system.

2

40.62, respectively. The T-ratio of 1.79 for the annual cumulative political violence events index was significant only in the "insurgency" period. The over-all correlation in the model was very significant as indicated by an F-ratio of 53.69. An R^2 Bar for the model of .9307 indicated that 93.07 percent of the deviation in the dependent variable was explained by the independent variables. This was higher than the R^2 Bar of .6847 which was reported for the basic marketing development model.⁴² This model was free of autocorrelation conditions. However, there was a multicollinearity condition existing between the intercept of the "pre-insurgency" period and the intercept of the "limited war" period which accounted to some degree for the high R^2 Bar reported for the model.

The next model in this series was constructed using the percent of the labor force employed in the tertiary sector as the dependent variable and dummy variables for the five basic independent political violence variables as the independent variables. Dummy intercept variables were used to separate the three time periods.⁴³ The intercepts in this model were all positive and significant. During the "pre-insurgency" and "limited war" periods the intercepts were very significant as indicated by T-ratios of 17.55 and 26.29, respectively. The only significant independent variable is government sanctions during the "insurgency" period, for

⁴²See Table 19.

⁴³See Table 20.

which a T-ratio of 2.05 was reported. There was a structural shift in the significant independent variables from riots and deaths from political violence in the corresponding basic marketing development model⁴⁴ to government sanctions during the "insurgency" period in this model. The over-all correlation in the model was very significant as indicated by an F-ratio of 51.21. The R^2 Bar for the model was .9415 indicating that 94.15 percent of the deviation in the dependent variable was explained by the independent variable. This was higher than the R^2 Bar of .8826 which was reported for the basic marketing development model. This model was free of autocorrelation conditions. However, there was a multicollinearity condition existing between the intercept of the "pre-insurgency" period and the intercept of the "limited war" period. This condition also obtains between these intercepts and government sanctions during the "insurgency" period. The multicollinearity in the model may account for the high R^2 Bar results obtained.

The next model in this series was constructed using the percent of the labor force employed in the commercial sub-sector as the dependent variable. Dummy variables were created for the intercept and the annual cumulative political violence events index in the three political violence time periods as the independent variables.⁴⁵ The intercept was positive and very significant in each time period. However,

⁴⁴See Table 19.

⁴⁵See Table 20.

the annual cumulative political violence events index was insignificant in the three time periods. A T-ratio of 1.01 was reported for this index during the "limited war" period which was significant at the 85 percent confidence level. Also, the over-all correlation in the model was insignificant at the 95 percent confidence level. The R^2 Bar for the model was .2615 which was higher than the R^2 Bar of .1620 reported in the basic marketing development model. Autocorrelation conditions in this model were in the inconclusive range which was the case in the basic marketing development model.⁴⁶

Also, a model which used the percent of the labor force employed in the commercial sub-sector as the dependent variable and dummy variables which represented the five basic political violence indicators as independent variables, was constructed. Dummy intercept variables were used in the model to provide separation of the three important political violence time periods.⁴⁷ The intercepts of this model were all positive and very significant. However, there were no significant independent political violence variables. Deaths from political violence reported a T-ratio of .97 during the "limited war" period which was significant at the 85 percent confidence level. The over-all correlation in the model was insignificant. The R^2 Bar for the model was .2576, which was slightly higher than the R^2 Bar of .1889 reported for the corresponding basic marketing development model.

⁴⁶See Table 19.

⁴⁷See Table 20.

Autocorrelation in this model was in the inconclusive range which was the case in the basic marketing development model.⁴⁸

The last set of models in this series, which was designed to measure the impact of political violence on employment indicators of marketing development, was constructed using the percent of the labor force employed in the whole-sale and retail trade sub-sector as the dependent variable. Dummy variables which represented the annual cumulative political violence events index were independent variables in the model. Also, dummy variables were generated to represent the intercept in each of the three political violence time periods.⁴⁹ The intercepts were positive and very significant in each time period. However, the annual cumulative political violence events index was insignificant in the three time periods. A T-ratio of 1.09 was reported for this index during the "limited war" political violence period which was significant at the 85 percent confidence level. The over-all correlation in the model was insignificant at the 95 percent confidence level. The R^2 Bar for the model was .3115 which indicated that 31.15 percent of the deviation in the dependent variable was explained by the independent variables. This was higher than the R^2 Bar of .2346 which was reported for the basic marketing development model.⁵⁰ Autocorrelation

⁴⁸ See Table 19.

⁴⁹ See Table 20.

⁵⁰ See Table 19.

conditions in this model were in the inconclusive range which was the case in the basic marketing development model.⁵¹

The last model in this series was constructed using the percent of the labor force employed in the wholesale and retail trade sub-sector as the dependent variable and dummy variables which represented the five basic political violence variables as the independent variables. Dummy intercept variables were also used to separate the three time periods.⁵² The intercepts in this model were all positive and very significant. There were no significant political violence variables. Deaths from political violence during the "limited war" period reported a T-ratio of 1.01 which was significant at the 85 percent confidence level. The over-all correlation in the model was insignificant. The R^2 Bar of the model was .3027 which was slightly lower than the R^2 Bar of .3061 reported in the basic marketing development model. This difference was partially due to adjustments made for the degrees of freedom in the models. Again, autocorrelation in this model was in the inconclusive range which was the case in the basic marketing development model.⁵³

National Income Models

The contributions to GDP by the tertiary sector and its commercial and wholesale and retail trade sub-sectors were

⁵¹See Table 19.

⁵²See Table 20.

⁵³See Table 19.

measures of marketing development. The impact of political violence on these indicators of marketing development were next evaluated. The scheme of moving from an analysis of the tertiary sector to its sub-sectors as outlined above was followed.

The first model in this series was constructed using the percent of the GDP contributed by the tertiary sector as the dependent variable and dummy variables which represented the annual cumulative political violence events index as the independent variables. Also, dummy intercept variables were used to separate the three political violence time periods in the study.⁵⁴ The intercepts were all positive and highly significant in this model. However, the annual cumulative political violence events index was insignificant in any of the three time periods. There was a T-ratio of 1.37 reported for this index in the "pre-insurgency" time period, which was significant at the 90 percent confidence level. The over-all correlation in the model was insignificant. The R^2 Bar of the model was .2634 which was an improvement over the R^2 Bar of .1952 reported in the basic marketing development model.⁵⁵ Autocorrelation in this model was in the inconclusive range which was the case in the basic marketing development model.⁵⁶

⁵⁴See Table 20.

⁵⁵See Table 19.

⁵⁶See Tables 19 and 20.

A companion to the above model was constructed using the percent of the GDP contributed by the tertiary sector as the dependent variable and dummy variables representing the five basic political violence indicators as the independent variables. Also, intercept dummy variables were used to separate the political violence time periods.⁵⁷ The intercepts were all positive and very significant. There were no significant independent political violence variables in the model.

Deaths from political violence during the "pre-insurgency" period reported a T-ratio of 1.28 which was significant at the 85 percent confidence level. The over-all correlation in the model was not significant. The R^2 Bar of the model was .2516 which was slightly higher than the R^2 Bar of .2328 reported in the basic marketing development model. Auto-correlation in this model was in the inconclusive range which was also the case in the basic marketing development model.⁵⁸

The first model in the next pair of models was constructed using the percent of the GDP contributed by the commercial sub-sector as the dependent variable and dummy variables which represented the annual cumulative political violence events index as the independent variables. Dummy intercept variables were also used to separate the three time periods.⁵⁹ All of the intercepts were positive and very significant in this model. The annual cumulative

⁵⁷See Table 20.

⁵⁸See Table 19.

⁵⁹See Table 20.

political violence events index was insignificant in all of the time periods. There was a T-ratio of 1.12 reported for this index in the "pre-insurgency" time period, which was significant at the 85 percent confidence level. The over-all correlation in this model was insignificant. The R^2 Bar of the model was .2432 which was an improvement over the R^2 Bar of .1840 reported in the corresponding basic marketing development model. The autocorrelation coefficient in this model improved to the inconclusive range versus positive autocorrelation in the basic marketing development model.⁶⁰

The second model in this pair of models was constructed using the percent of the GDP contributed by the commercial sub-sector as the dependent variable and dummy variables which represented the five basic political violence indicators as the independent variables. Dummy intercept variables were also used to separate the three time periods.⁶¹ All of the intercepts were positive and very significant. The only significant independent political violence variable was armed attacks during the "pre-insurgency" period. Also, protest demonstrations during the "pre-insurgency" period were marginally significant. There were structural shifts between the significant independent variables in this model and those found in the basic marketing development model. In this model, protest demonstrations were only marginally significant while in the basic marketing development model

⁶⁰See Tables 19 and 20.

⁶¹See Table 20.

they were significant at the 95 percent confidence level. Armed attacks were at approximately the same level of significance in both models.⁶² The over-all correlation in the model was not significant. The R^2 Bar of the model was .3132 which was slightly less than the R^2 Bar of .3337 which was reported for the basic marketing development model. Auto-correlation in this model was in the inconclusive range which was also the case in the basic marketing development model.⁶³

The last pair of models in this series addressed the contributions to GDP made by the wholesale and retail trade sub-sector and the impact of political violence on this sub-sector. The first model was constructed using the percent of the GDP contributed by the wholesale and retail trade sub-sector as the dependent variable and dummy variables which represented the annual cumulative political violence events index as the independent variables. Dummy intercept variables were also used to separate the three time periods under analysis.⁶⁴ The intercepts were all positive and very significant. The cumulative political violence events index was insignificant during the three time periods. There was a very low T-ratio of .58 reported for this index during the "limited war" period. However, the over-all correlation in the model was significant. The R^2 Bar of the model was .4921 as compared to an R^2 Bar of .2566 reported in the basic

⁶²See Tables 19 and 20.

⁶³See Table 19.

⁶⁴See Tables 19 and 20.

marketing development model. Much of the significance in this model was taken up in the intercept variables. The autocorrelation in this model improved to the inconclusive range versus positive autocorrelation in the basic marketing development model.⁶⁵

The last model in this series was constructed using the percent of the GDP contributed by the wholesale and retail trade sub-sector as the dependent variable and dummy variables which represented the five basic political violence variables as the independent variables in the model. Also, dummy variables were used for the intercepts in the model.⁶⁶ The intercepts in the model were positive and very significant. There were no significant political violence variables in this model. Armed attacks in the "limited war" period were marginally significant at the 95 percent confidence level. However, the T-ratio of 1.01 reported for this variable was significant at the 85 percent confidence level. There were structural shifts between the significant independent variables in this model and those reported in the basic marketing development model. In this model, only armed attacks were marginally significant during the "limited war" period. In the basic marketing development model both armed attacks and protest demonstrations were clearly significant.⁶⁷ The over-all correlation of the model was significant, and

⁶⁵See Tables 19 and 20.

⁶⁶See Table 20.

⁶⁷See Table 19.

the R^2 Bar of .5167 was higher than the R^2 Bar of .4425 reported in the basic marketing development model. Autocorrelation was in the inconclusive range in this model which was the case in the basic marketing development model.

The effects of the use of slope and intercept dummy variables in multiple regression models which used per capita GNP and GDP measures of national income were also reported. In the per capita GNP model which used the annual cumulative political violence events index as the independent variable, the intercepts during the three political violence time periods were all positive and very significant. The annual cumulative political violence events index variable was significant during the "insurgency" period and marginally significant during the "limited war" period. The over-all correlation in the model was significant as indicated by an F-ratio of 10.06. The R^2 Bar for the model was .7482. Autocorrelation in the model was in the indeterminate range. When the five basic political violence variables were used in the next iteration of this model, the intercepts remained positive and very significant. The significant explanatory variables in this model were riots during the "insurgency" period and government sanctions during the "limited war" period. The over-all correlation in this model was very significant. The R^2 Bar of the model was .8157. Autocorrelation in the model was again in the indeterminate range.

A model was constructed using the GDP as the dependent variable and dummy variables which represented the annual

cumulative political violence events index as the independent variable. Dummy intercept variables were also used to separate the three time periods of the study. The intercepts were positive and significant only in the "limited war" period, and the independent annual cumulative political violence events index variable was insignificant. However, the overall model correlation was significant and the R^2 Bar of the model was .4409. There was autocorrelation in the model. When the individual five political violence variables were exchanged for the annual cumulative political violence events index in the next iteration of the model, the same situation occurred with the intercept. However, protest demonstrations and government sanctions in the "limited war" period were significant explanatory variables. The over-all correlation in the model was highly significant. The R^2 Bar of the model was .8698. Autocorrelation conditions in the model were in the indeterminate range.

Summary

The researcher was unable to locate any empirical studies with which to compare the impact of political violence on national marketing development. Measurement of this unique phenomenon has relied upon sector employment and national income statistics as the traditional indicators of national marketing development. The accepted indicators of the underlying dimension of political violence were used. The strength of the association between marketing development indicators and political violence indicators was measured

through a series of multiple regression models. Slope and intercept dummy variables were used in the multiple regression models. The purpose of the dummy variable technique was to determine if shift parameters were present and had become institutionalized in the independent data. It was also necessary to discern if structural changes had taken place in the political violence variables during the three important political violence time periods. Almon lag structures were developed to measure the significance and duration of the lagged effect of political violence on marketing development indicators.

For convenience in presentation, the analysis of the impact of political violence on national marketing development was divided into two categories: employment indicators and national income indicators. Likewise, the analysis of institutional effects and structural changes was also divided into employment models and national income models. In this case, comparisons were made between the OLS regression model results and the results obtained from the multiple regression which utilized the slope and intercept dummy variables.

The strength of the association between tertiary sector employment and political violence decreased. This decrease occurred as the tertiary sector was disaggregated from the tertiary sector level into the commercial sub-sector and into the wholesale and retail trade sub-sector. This trend was evident in both the models which used the annual cumulative political violence events index and the five basic individual

political violence indicators as explanatory variables. In the models which employed the annual cumulative political violence events index as the independent variable and sector employment indicators as the dependent variable, the significant T-ratios of the independent variable declined from 3.88 in the tertiary sector employment model to 1.76 in the commercial sub-sector employment model and decreased to 2.21 in the wholesale and retail trade sub-sector employment model. The intercepts in all three models were positive and significant. The over-all correlation was highly significant in the tertiary sector model, insignificant in the commercial sub-sector model and significant in the wholesale and retail trade sub-sector model. The test for autocorrelation in one of these models was slightly below the inconclusive range. The results of the tests of the two remaining models for autocorrelation were in the inconclusive range.

The strength of the association between tertiary sector employment and political violence declined in the models which used the five basic individual indicators of political violence. However, more importantly there were shifts between the models regarding the significant explanatory variables. In the tertiary sector model, riots and deaths from political violence were significant at the 95 percent confidence level. Riots were insignificant in the OLS models for the commercial sub-sector model, and only deaths from political violence were significant. The wholesale and retail trade sub-sector model also reported deaths from

political violence as a significant predictor variable at the 95 percent confidence level, but showed government sanctions to be marginally significant. The intercepts of the three models were positive and significant. Also, the over-all model correlation was highly significant in the tertiary sector model, insignificant in the commercial sub-sector model and significant in the wholesale and retail sub-sector model. Autocorrelation conditions in all three models were in the inconclusive range.

The association between the tertiary sector and political violence showed the strongest positive strength. The strength of the association was weaker in the commercial sub-sector but turned stronger in the wholesale and retail trade sub-sector.

The test for lag or saturation effect of political violence on the tertiary sector and sub-sector employment revealed that the significant lag periods for the annual cumulative political violence events index was five years in all three models. In the models employing the individual political violence indicators, the significant lagged periods were four years in the tertiary sector model and five years in the commercial and wholesale and retail sub-sector models. This indicated that the impact of the annual cumulative political violence events index was realized in changes in sector employment in the fifth year. The individual political violence indicators impact was reflected in sector employment in the fourth year in the tertiary sector and in

the fifth year in the commercial and wholesale and retail trade sub-sectors.

The strength of the association between tertiary sector contributions to the GDP and indicators of political violence followed the same general pattern as found in the sector and sub-sector labor force indicators. As the strength of this association decreased, the tertiary sector contributions to GDP became disaggregated at the commercial and wholesale and retail trade sub-sectors. The association in the tertiary sector model was very significant. The strength of the commercial sub-sector models was significant to mildly insignificant. The strength of the wholesale and retail trade sub-sector models was relatively more significant than the tertiary sector model.

It is also important to note that there were shifts between the models as to the significant explanatory variables. The significant independent variable in the tertiary sector model was deaths from political violence. Armed attacks and protest demonstrations were the significant explanatory variables in the commercial and wholesale and retail trade sub-sector models. It should be noted that these were not the same significant predictor variables as those found in the corresponding tertiary sector and sub-sector employment models.

The test for lag effects of political violence on the tertiary sector and sub-sector GDP models showed that the lagged periods ranged from five to seven years when the

annual cumulative political violence events index was used as the predictor variable. The lag period was a constant five years in the structures which used an individual political violence explanatory variable. Generally, political violence impacted upon sector contributions to GDP in the fifth year. The exception was the annual cumulative political violence events index in which the significant lagged effect of this impact was reflected in the commercial sub-sector model in the seventh year.

A test of the strength of the association between national income indicators of per capita GNP and GDP and political violence was made. The annual cumulative political violence events index was a more potent explanatory variable in the GDP model than in the per capita GNP model. The overall GDP model reflected significant levels of correlation while the per capita GNP model had an insignificant level of correlation. When individual indicators of political violence were introduced as explanatory variables in the models, the level of significance in both the per capita GNP and GDP models improved and became very significant. In fact, the association between per capita GNP and GDP and the individual indicators of political violence was stronger than any other relationship in this series. It is important to note that there were shifts between the models as to the significant explanatory variables. In the per capita GNP model, the significant explanatory variables were riots and government sanctions. In the GDP model, the significant

explanatory variables in the model were armed attacks and protest demonstrations.

The test for lag effect in the national income models, through the use of the Almon lag technique, yielded mixed results. The most significant lagged period for per capita GNP was five years. The most significant lag period for the GDP model was seven years using the annual cumulative political violence events index and five years using armed attacks. Political violence impacts were reflected in changes in the per capita GNP after five years and in the GDP from five to seven years.

Slope and intercept dummy variables were used to determine if a need to separate the three political violence time periods could be confirmed. Specifically, the dummy variables were designed to detect the presence of shift parameters which may have become institutionalized in the data. The researcher determined if structural changes had taken place in the independent political violence variables during the three political violence time periods.

The labor force models, which employed the dummy variable techniques, provided mixed results. The intercepts for each political violence time period were positive and very significant. However, the annual cumulative political violence events index in these models displayed different potency as an explanatory variable in the various time periods. In the tertiary sector model, the annual cumulative political violence events index was a significant predictor

variable only in the "insurgency" period. In the commercial and wholesale and retail trade sub-sector models, the annual cumulative political violence events index was insignificant at the 95 percent confidence level in all the political violence time periods. However, this explanatory variable did show some strength in both models during the "limited war" period. The intercepts in all three models were positive during the three political violence time periods. Also, the T-ratios on the intercepts in all three models were highly significant during the three political violence time periods, except during the "insurgency" period in the tertiary sector model where the T-ratio was significant. It was clear that the significance in these models was taken up by the intercept rather than the annual cumulative political violence events index which was the explanatory variable. This indicated that the intercepts had shifted during the three political time periods. Therefore, these shift parameters in the independent data had become institutionalized during the respective political violence time periods. This is sometimes called a "temporal effect" when it is postulated, as we did in this study, that a behavioral relation shifts between one period and others.⁶⁸

There was a lack of commonality, in the significant explanatory variables, between the models in which dummy variables represented the five basic political violence

⁶⁸J. Johnston, Econometric Methods (New York: McGraw-Hill Book Company, 1972), p. 177.

variables as independent variables. In the tertiary sector labor employment model, the only significant variable was government sanctions during the "insurgency" period. In the commercial sub-sector model, all the explanatory variables were insignificant at the 95 percent confidence level. However, the deaths from political violence variable was marginally significant in this model during the "limited war" period. Likewise, in the wholesale and retail trade sub-sector model only the deaths from political violence variable was marginally significant during the "limited war" period. In this case, there was evidence of structural changes which can be attributed to the separation of the time periods. In the OLS model for the tertiary labor sector the significant independent variables were riots and deaths from political violence. In the corresponding dummy variable model, the significant variable shifted to government sanctions. In the OLS model for the commercial and wholesale and retail trade sub-sectors, deaths from political violence was the significant explanatory variable. In the corresponding dummy variable models, the same explanatory variable was insignificant.

The use of slope and intercept dummy variables in the tertiary sector and sub-sector GDP models also provided mixed results. The series of models, which used the contributions of the tertiary sector and the commercial and wholesale and retail trade sub-sectors as dependent variables and the annual cumulative political violence events index as the

independent variable, all reported positive and highly significant intercepts in all three political violence time periods. However, the explanatory annual cumulative political violence events index was insignificant in all of the political violence time periods. There was an insignificant level of association shown for the independent variable in the "pre-insurgency" time period in both the tertiary sector and commercial sub-sector models. The wholesale and retail trade sub-sector model showed some strength of association in the independent variable during the "limited war" period.

The intercepts in all three political violence time periods were positive and highly significant in the tertiary GDP model and in the commercial and wholesale and retail trade sub-sector models, when the five basic political violence variables were used as independent variables. However, there were shifts between the models as to the significant explanatory variables. In the tertiary GDP model, all the independent political violence variables were insignificant. Deaths from political violence was marginally significant in this model during the "pre-insurgency" period. The commercial sub-sector model reported armed attacks during the "pre-insurgency" period as the significant explanatory variable. The protest demonstrations variable in this model was marginally significant during this same period. The wholesale and retail trade sub-sector model reported all independent variables in all of the time periods as insignificant. Armed attacks were marginally significant in this

model during the "limited war" period. The significant explanatory variables in this series of GDP models utilizing dummy variable techniques were different from the explanatory variables reflected in the corresponding OLS models.

The models which used the national income indicators of per capita GNP and GDP maintained their strong association with the indicators of political violence. The intercepts were positive and very significant in both iterations of the per capita GNP models. The annual cumulative violence events index was a significant explanatory variable in the first per capita GNP model during the "insurgency" period. In the next iteration of this model, riots in the "insurgency" period and government sanctions during the "limited war" period were the significant explanatory variables. The over-all correlation in both models was very significant. However, as explained earlier, the explanation was concentrated in the intercepts rather than the political violence explanatory variables in these two models. This indicated that shift parameters in the independent data have become institutionalized during the political violence time periods.

Both iterations of the GDP model had significant and positive intercepts only in the "limited war" period which indicated that this intercept took up a very large portion of the explanation in these models. This was further evidenced by the fact that the annual cumulative political violence events index as the explanatory variable was insignificant in any of the three time periods. In the second

iteration of the model, two explanatory variables, protest demonstrations and government sanctions in the "limited war" period, were significant. Obviously, shift parameters in the independent data have become institutionalized in the "limited war" political violence time period.

The Impact of Political Violence on the
Development of An Infrastructure,
Marketing Operations and
Marketing Middlemen

The impact of political violence in South Vietnam was considered by many writers to have fallen particularly heavy on the infrastructure which supports national marketing operations and other economic activity. It was speculated by these same writers that the effects of political violence on infrastructure development were magnified when they reached the supported marketing operations and the middlemen who conduct these operations. A significant purpose of this study was to determine the relationship, if any, between the development of an infrastructure supporting marketing operations and political violence. The specific task addressed in this section was to develop an analysis of the research question:

What was the impact of political violence on the development of an infrastructure to support marketing operations and marketing middlemen in South Vietnam?

The plan of analysis outlined earlier in this chapter was followed in executing the above task.

Transportation System

Transportation systems are a vital part of the infrastructure which supports marketing operations and marketing middlemen. Indicators of the performance of major transportation systems, number of motor vehicles in use, railway passenger/kilometers, domestic air passenger/kilometers and coastwise shipping in commercial ports, were structured as the dependent variable in the first series of multiple regression models. The independent variable in this series was alternately the cumulative political violence events index and the five individual basic political violence indicators.⁶⁹ The first group of models in this series used the above indicated dependent variables and employed the annual cumulative political violence events index as the independent variable.

In this first group of models, all of the intercepts were positive and very significant as indicated by T-ratios which ranged from a low of 4.90 in the case of domestic air passenger/kilometers to a high of 8.70 for railway passenger/kilometers.⁷⁰ The annual cumulative political violence events index was significant at the 95 percent confidence

⁶⁹ Some models in this section were based on quarterly data for the dependent variable and in these cases the quarterly cumulative political violence events index or individual basic political violence indicators stated on a quarterly basis were independent variables as specified by the model in which they were used.

⁷⁰ See Tables 21 and 22. Also, it should be noted that annual domestic air passenger/kilometer data are only available for 1962 through 1972. Corresponding political violence variables were used in the models.

TABLE 21

THE IMPACT OF POLITICAL VIOLENCE ON THE ANNUAL DEVELOPMENT OF THE INFRASTRUCTURE

Dependent Variable	Independent Variable	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code 501) ^d	Deaths From Political Violence (Code 502)	Armed Attacks (Code 504)	Protest Demonstrations (Code 506)	Government Sanctions (Code 519)	Cumulative Political Events (Code 520)
Number of Motor Vehicles in Use (000)		109.9 ^a (7.94) ^b	- ^c	-	-	-	-	-
(Code NOMVU201)		107.2 (10.67)	-	-	.01016 (5.37)	2.159 (2.99)	-.09420 (2.16)	-
Railway Passenger/ Kilometers (000 KM)		333,400 (8.70)	-	-	-	-	-	-
(Code RAPAK202)		415,300 (15.29)	-.009458 (3.99)	-4.254 (5.07)	-	-	-	-
Coastwise Shipping in Commercial Ports (000 Metric Tons)		371.1 (7.93)	-	-	-	-	-	-
(Code CWSCP204)		36.06 (7.42)	3.874 (.83)	.002918 (1.40)	-	-	-1.172 (.61)	-
Domestic Air Post Letters Received and Mailed (000)		10,910 (16.96)	-	-	-	-	-	-
(Code DAPLR205)		11,180 (17.27)	-	.07230 (2.54)	-	58.55 (1.22)	-49.08 (1.08)	-
Number of Checks Presented for Clearance (000,000)		1,119 (4.66)	-	-	-	-	-	-
(Code NCPFE208)		1,051 (6.92)	-	-	.1752 (6.12)	40.87 (3.74)	-18.58 (2.82)	-
Percent of Business Patente Licenses - Less Than 500 VN\$ (000)		76.93 (17.31)	-	-	-	-	-	-
(Code PBPLL209)		75.49 (28.93)	-	-	-.003592 (7.31)	-.06379 (3.40)	.03751 (3.32)	-
Percent of Business Patente Licenses for 500-2,999 VN\$ (000)		18.86 (6.14)	-	-	-	-	-	-
(Code PBPLM210)		19.06 (11.97)	-	-	.00254 (8.48)	.04596 (4.01)	-.02509 (3.64)	-
Percent of Business Patente Licenses for Public Works Contractors (000)		2.871 (1.61)	-	-	-	-	-	-
(Code PBPLP211)		5.415 (3.54)	-	.0002727 (4.05)	-	.02119 (1.87)	-.02485 (2.94)	-
Number of Commercial Establishments		66,830 (13.75)	-	-	-	-	-	-
(Code NCOME212)		64,620 (11.87)	-.01660 (.28)	-.03567 (.74)	1.475 (.72)	185.7 (.41)	95.04 (.27)	-
Per Capita Electric Energy Consumption (000 KWH)		23.12 (7.23)	-	-	-	-	-	-
(Code PCEEC213)		17.93 (7.58)	.04376 (1.77)	-	.002261 (5.42)	.1637 (1.26)	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by a dash.

^dVariables have been coded for ease in computer application.

TABLE 21

DEVELOPMENT OF THE INFRASTRUCTURE SUPPORTING MARKETING OPERATIONS

Observations (N)	Government Sanctions (Code 519)	Cumulative Political Violence Events Index (Code ACPVIND)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
	-	.00107 (2.86)	.3385	.3385	8.188	1.746	4.490	.590	.813
	-.09420 (2.16)	-	.6951	.6544	10.638	1.761	3.340	.119	1.779
	-	-3.524 (3.41)	.4202	.4202	11.595	1.746	4.490	.551	.905
	-	-	.7270	.7099	19.970	1.753	3.680	-.046	2.060
	-	.001722 (1.36)	.1041	.1041	1.859	1.746	4.490	.159	1.982
	-1.172 (.61)	-	.1538	.0410	.849	1.761	3.340	.107	2.176
	-	.04182 (2.41)	.2659	.2659	5.795	1.746	4.490	.161	1.974
	-49.08 (1.08)	-	.3504	.2637	2.517	1.761	3.340	-.027	2.547
	-	.01662 (2.56)	.2911	.2911	6.570	1.746	4.490	.630	.751
	-18.58 (2.82)	-	.7513	.7181	14.096	1.761	3.340	-.117	2.255
	-	-.0003331 (2.78)	.3250	.3250	7.703	1.746	4.490	.708	.608
	.03751 (3.32)	-	.7965	.7693	18.260	1.761	3.340	.074	1.850
	-	.0002299 (2.77)	.3244	.3244	7.684	1.746	4.490	.812	.465
	-.02509 (3.64)	-	.8412	.8200	24.721	1.761	3.340	-.003	2.008
	-	-.0001219 (2.53)	.2850	.2850	6.377	1.746	4.490	.467	1.066
	-.02485 (2.94)	-	.5413	.4801	5.506	1.761	3.340	.021	1.962
	-	-.03505 (.27)	.0044	.0044	.071	1.746	4.490	.681	.410
	95.04 (.27)	-	.0626	-.2259	.160	1.782	3.110	.652	.501
	-	.0002935 (3.40)	.4192	.4192	11.549	1.746	4.490	.554	.889
	-	-	.7218	.6847	12.108	1.761	3.340	.314	1.364

Processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360

included in the model are indicated by -.

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TABLE 22

THE IMPACT OF POLITICAL VIOLENCE ON THE ANNUAL (1962-1972) DEVELOPMENT

Dependent Variable	Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code S501) ^d	Deaths From Political Violence (Code S502)	Armed Attacks (Code S504)	Protest Demonstrations (Code S506)	Governance Sanction (Code S508)
Domestic Air Passenger/ Kilometers (000 KM)		233,900 ^a (4.90) ^b	- ^c	-	-	-	-
(Code XD0APK203)		337,000 (8.80)	-	2.298 (1.69)	-	-	-.002619 (2.00)
Circulation of Daily Newspapers (000)		1,048 (9.47)	-	-	-	-	-
(Code XC0DNP206)		1,052 (17.29)	-	-	.04256 (4.17)	11.18 (3.03)	-7.397 (3.47)
Average Weekly Radio Broadcast Hours		72.82 (12.33)	-	-	-	-	-
(Code XAVWRB207)		66.64 (11.23)	.02732 (.73)	.00008159 (.20)	.001804 (.90)	.04499 (1.23)	-.03011 (.95)
General Index of Industrial Production		163.1 (10.41)	-	-	-	-	-
(Code XGIOIP214)		135.0 (10.11)	1.102 (1.35)	-	.005457 (2.43)	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Lease computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model

^dVariables have been coded for ease in computer application.

TABLE 22

1962-1972) DEVELOPMENT OF THE INFRASTRUCTURE SUPPORTING MARKETING OPERATIONS

Protest Demonstrations (Code S506)	Government Sanctions (Code S519)	Cumulative Political Violence Events Index (Code SACPVIIND)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
-	-	1.025 (.85)	.0750	.0750	.730	1.833	5.120	.650	.671
-	-.002619 (2.00)	-	.3724	.3026	2.373	1.860	4.460	.397	1.249
-	-	.002229 (.80)	.0666	.0666	.642	1.833	5.120	.431	1.169
11.18 (3.03)	-7.397 (3.47)	-	.7806	.7257	8.300	1.895	4.350	.082	2.268
-	-	.0001306 (.88)	.0792	.0792	.774	1.833	5.120	.559	.852
.04499 (1.23)	-.03011 (.95)	-	.4829	.1381	.934	2.015	5.050	.307	1.405
-	-	.0004163 (1.06)	.1103	.1103	1.116	1.833	5.120	.616	.725
-	-	-	.4270	.3633	2.981	1.860	4.460	.447	1.112

Processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360

included in the model are indicated by

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level only in the case of number of motor vehicles in use and railway passenger/kilometers. This explanatory indicator was significant at the 80 percent confidence level in the model using domestic air passenger/kilometers and at the 90 percent confidence level in the model using coastwise shipping in commercial ports. The over-all correlation was very significant in the number of motor vehicles in use and railway passenger/kilometers models. Also, the R^2 Bar values for these models were .3385 and .4202 respectively. The over-all correlation in the domestic air passenger/kilometers and coastwise shipping in commercial ports models was insignificant. Likewise, the R^2 Bar values reported for these models were low at .0750 and .1041 respectively compared with the values reported for the other two models in this group. There was positive autocorrelation in all of this group of models except the coastwise shipping in commercial ports model which was in the inconclusive range.

The second group of models in this series used the same dependent variables and the five individual basic political violence indicators were the independent variables.⁷¹ The intercepts in this group of models were all positive and very significant. The level of significance on the intercept ranged from a low T-ratio of 7.42 for coastwise shipping in commercial ports to a high T-ratio of 15.29 for railway passenger/kilometers. The significant individual political violence explanatory variables were not the same in each

⁷¹Ibid.

model in this group. Riots was a significant explanatory variable only in the railway passenger/kilometer model. The deaths from political violence variable was also significant only in this model. However, it was marginally significant in the domestic air passenger/kilometer and coastwise shipping in commercial ports models. Armed attacks and protest demonstrations were significant only in the number of motor vehicles in use model. Government sanctions were significant in number of motor vehicles in use and domestic air passenger/kilometers models. There was no discernible pattern to the significant predictor variables in this group of models. However, the significance of the over-all correlation in these models was similar to that reported for the models which used the annual cumulative political violence events index as the independent variable. The over-all correlation was very significant in the number of motor vehicles in use and railway passenger/kilometers models as indicated by an F-ratio of 10.638 and 19.970 reported respectively for these models. There were also significant R^2 Bar values of .6544 and .7099 respectively for these two models. This means that 65.44 percent of the deviation in the number of motor vehicles in use was explained by armed attacks, protest demonstrations and government sanctions. Also, 70.99 percent of the deviations in railway passenger/kilometers was explained by riots and deaths from political violence. The F-ratios for the models using domestic air passenger/kilometers and coastwise shipping in commercial ports as the

dependent variable were insignificant. Also, the respective R^2 Bar values for these models were .3026 and .0410 respectively. Positive autocorrelation was in the inconclusive range for the number of motor vehicles in use and domestic air passenger/kilometers models and there was no autocorrelation in the remaining two models.

The next series of models employed the number of motor vehicles in use, railway passenger/kilometers and coastwise shipping in commercial ports as the dependent variable. Dummy variables represented alternately the annual cumulative political violence events index and the individual five basic political violence variables as the independent variable. Also, dummy intercept variables were used to separate the data into the three political violence time periods.⁷² The first group of models in this series used the above indicated dependent variables and utilized the annual cumulative political violence events index as the explanatory variable.

In this first group of models the intercepts were positive but they were significant in only the "pre-insurgency" and "insurgency" time periods. The annual cumulative political violence events index was significant in only the railway passenger/kilometers model during the "insurgency" period. However, the over-all correlation was significant

⁷²See Table 23. Note that domestic air passenger/kilometers was not included in this series as a dependent variable. Data for this variable were available only for the years 1962 through 1972, which was considered to be an insufficient number of data points for employment in multiple regression models which employ dummy variables.

TABLE 23

THE IMPACT OF POLITICAL VIOLENCE ON THE ANNUAL DEVELOPMENT

Independent Variable(s) Dependent Variable	Institutional Effects (Shift Parameters) ^c			Structural Changes (Slope Changes) ^f											
	Intercept (Reg. Coef.)(T-Ratio)			Riots (Code 501)			Deaths From Political Violence (Code 502)			Armed Attacks (Code 504)			Protest Demonstration (Code 506)		
	DUMMY ^d 1955-60	DUMMY1 1961-64	DUMMY2 1965-72	RDUMMY0 1955-60	RDUMMY1 1961-64	RDUMMY2 1965-72	DDUMMY0 1955-60	DDUMMY1 1961-64	DDUMMY2 1965-72	ADUMMY0 1955-60	ADUMMY1 1961-64	ADUMMY2 1965-72	PDUMMY0 1955-60	PDUMMY1 1961-64	PDUMMY2 1965-72
Number of Motor Vehicles in Use (000) (Code NONVU201)	83.98 ^a (1.71) ^b	202.5 (4.53)	- ^c	-	-	-	-	-	-	-	-	-	-	-	-
Railway Passenger/ Kilometers (000 KM) (Code RAPAK202)	79.12 (3.19)	-	237.7 (5.15)	-	-	-	-	-	-	-	-	.003229 (1.05)	-	-	-
Coastwise Shipping in Commercial Ports (000 Metric Tons) (Code ChSCP204)	446,600 (13.37)	894,900 (4.99)	-	-	-689.2 (3.31)	-	-	-84.30 (2.97)	-	-	-	-	-	-	-
Domestic Air Post Letters Received and Mailed (000) (Code DAPLR205)	294.5 (1.71)	534.9 (3.38)	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Checks Presented for Clearance (000,000) (Code NCPFE208)	260.3 (4.19)	523.4 (10.65)	-	98.45 (3.88)	-	-	-	-	-	-	-	-	-	-	-
Percent of Business Patent Licenses - Less Than 500 VN\$ (000) (Code PBPLL209)	10,850 (11.20)	-	14,640 (9.95)	-	-	-	-	-	-	-	-	-	-	-	-
Percent of Business Patent Licenses for 500-2,999 VN\$ (000) (Code PBPLM210)	12,090 (23.47)	8,686 (23.47)	15,450 (33.36)	-	-	-	.8257 (1.68)	-	-	-	-	-	-3,766 (9.48)	-	-
Percent of Business Patent Licenses for Public Works Contractors (000) (Code PBPLP211)	678.4 (.99)	-	2,565 (4.06)	-	-	-	-	-	-	-	-	-	-	-	-
Number of Commercial Establishments (Code NCOME212)	639.8 (2.31)	-	2,328 (3.89)	-	-	-	-	-	-	-	-	-	-	-	-
Per Capita Electric Energy Consumption (000 KWH) (Code PCEEC213)	81.63 (11.13)	82.89 (2.10)	53.70 (4.82)	-	-	-	-	-	-	-	-	-	-	-	-
	81.63 (47.87)	83.30 (39.88)	50.55 (13.72)	-	-	-	-	-	-	-	-	-.002374 (9.49)	-	-	-
	16.07 (2.59)	-	31.39 (3.32)	-	-	-	-	-	-	-	-	-	-	-	-
	16.07 (2.83)	-	48.76 (5.61)	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	13.81 (3.77)	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	21.64 (19.68)	-	-	-	-	-	.00009294 (4.96)	-	-	-	-	-	-
	71,680 (5.81)	82,320 (9.01)	65,040 (10.07)	-	-	-	-	-	-	-	-	-	-	-	-
	65,180 (6.86)	82,320 (8.98)	65,040 (10.03)	-	-	-	-	-	-	-295.1 (1.55)	-	-	-	-	-
	14.92 (4.08)	-	47.22 (14.93)	-	-	-	-	-	-	-	-	-	-	-	-
	14.92 (2.65)	-	40.76 (6.15)	-	-	-	-	-	-	-	-	.00009856 (1.44)	-	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software.

^aThe regression coefficient is reported for each variable in the regression model.^bThe T-Ratio is reported for each variable in the regression model.^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.^dVariables have been coded for ease in computer application.^eIntercept dummy variables have been generated to detect shift parameters between the three time periods of the study.^fSlope dummy variables have been generated to detect slope changes between the three time periods of the study.

TABLE 23

INFLUENCE ON THE ANNUAL DEVELOPMENT OF THE INFRASTRUCTURE SUPPORTING MARKET OPERATIONS

Structural Changes (Slope Changes) ^f										R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
Backs (#)	Post Test Demonstrations (Code 506)			Government Sanctions (Code 519)			Cumulative Political Violence Events Index (Code CPVIND)									
ADUMY2 1965-72	PDUMY0 1955-60	PDUMY1 1961-64	PDUMY2 1965-72	GDUMY0 1955-60	GDUMY1 1961-64	GDUMY2 1965-72	Z0DUMY0 1955-60	Z1DUMY1 1961-64	Z2DUMY2 1965-72							
-	-	-	-	-	-	-	-.005904 (.13)	-	-.00003553 (.05)	.1912	.0179	6.183	1.771	3.180	.606	.798
.003229 (1.05)	-	-	-	-	-	-.9864 (1.83)	-	-	-	.4264	.3034	10.049	1.771	3.180	.616	.767
-	-	-	-	-	-	-	-	-102.9 (3.30)	-	.8715	.8544	40.572	1.761	3.340	.451	1.095
-	-	-	-	-	-	-	-	-	-	.9165	.8386	45.218	1.771	3.180	.552	.899
-	-	-	-	-	-	-	780.7 (.49)	-	.0002051 (.09)	.2948	.4630	3.146	1.771	3.180	.246	1.667
-	-	-	-	-	6.632 (4.07)	-	-	-	-	.6425	.5659	7.807	1.771	3.180	.270	1.404
-	-	-	-	-	-	-	-	1.474 (7.15)	-.001812 (.08)	.5494	.4528	5.813	1.771	3.180	-.291	4.168
-	-3.766 (9.48)	-	-	-	-	-15.37 (2.38)	-	-	-	.9629	.9474	47.539	1.796	3.090	-.022	2.092
-	-	-	-	-	-	-	-.04687 (.07)	-	-.006304 (.07)	.4256	.3025	5.395	1.771	3.180	.727	.635
-	-	-	33.44 (2.23)	-	-	-24.32 (3.34)	-	-	-	.7641	.6915	13.141	1.782	3.110	.725	.570
-	-	-	-	-	-	-	-	741.000 (.01)	-.00005813 (.35)	.5405	.3991	2.823	1.782	3.110	.847	.434
-.002374 (9.49)	-	-	-.4805 (5.19)	-	-	.4791 (10.70)	-	-	-	.9772	.9677	78.670	1.796	3.090	.221	1.752
-	-	-	-	-	-	-	-	-	.00008122 (.59)	.1940	.0865	5.767	1.761	3.340	.769	.570
-	-	-	-	-	-	-.2169 (1.79)	-	-	-	.3277	.2380	7.841	1.761	3.340	.540	.949
-	-	-	-	-	-	-	-	-	-.0000007788 (.14)	.5937	.5683	11.413	1.753	3.680	.529	.942
-	-	-	-	-	-	-.2174 (13.91)	-	-	-	.9730	.9694	172.437	1.761	3.340	.159	1.613
-	-	-	-	-	-	-	-18.89 (1.58)	-	-	.3651	.2291	1.869	1.771	3.180	.351	1.421
-	-	-	-	-	-	-	-	-	-	.3603	.2233	1.631	1.771	3.180	.557	.878
-	-	-	-	-	-	-	-	.003814 (4.90)	-	.7790	.7495	17.194	1.761	3.340	.638	.771
.00009856 (1.44)	-	-	-	-	-	-	-	-	-	.4771	.4073	13.849	1.761	3.340	.540	.920

Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

2

in all of the models in this group except coastwise shipping in commercial ports. All of the R^2 Bar values for the models in this group were low except railway passenger/kilometers for which the R^2 Bar was .8544. There was positive autocorrelation in the number of motor vehicles in use model and the remaining two models were in the indeterminate range. The intercept dummy variables accounted for most of the significance in this first group of models and indicated that there were shift parameters which had become institutionalized in the dependent data during the "pre-insurgency" and "insurgency" political violence time periods.

The second group of models in this series utilized the same dependent variables as the first group. The independent variables in this group were dummy variables which represented the five individual basic political violence variables. Dummy intercept variables were used to separate the data into the three political violence time periods.⁷³ The intercepts reported for this group of models were positive but they were insignificant in all three time periods. In the number of motor vehicles in use model the significant intercepts were in the "pre-insurgency" and "limited war" periods. In the remaining two models in this series the significant intercepts were in the "pre-insurgency" and "insurgency" time periods. The significant explanatory variables in the respective models were: riots, "insurgency" period for railway passenger/kilometers, and riots, "pre-insurgency" period

⁷³See Table 23.

for coastwise shipping in commercial ports; deaths from political violence, "insurgency" period for railway passenger/kilometers; and government sanctions, "limited war" period for number of motor vehicles in use and "insurgency" period for coastwise shipping in commercial ports. It should be noted that the significant explanatory variables in the models which employed the intercept and slope dummies were different from the significant explanatory variables reported in the ordinary least squares models. Also, the level of significance changed in most cases and was isolated to one specific political violence time period. These structural changes in the explanatory variables were channeled to the time period in which they had the greatest potency. As cited before, the intercept dummy variables accounted for most of the significance in this group of models, indicating institutionalization of the independent data occurred during the respective time periods.

The over-all correlation in this group of models improved to a very significant level. In some cases the R^2 Bar values fell or increased over their corresponding ordinary least squares models. Autocorrelation conditions were in the inconclusive range for railway passenger/kilometers and coastwise shipping in commercial ports.

A series of lag structures were developed and computed for number of motor vehicles in use, railway passenger/kilometers and coastwise shipping in commercial ports as the dependent variable. The independent variable in these

structures was alternately the annual cumulative political violence events index and the individual political violence indicator which enjoyed the highest T-ratio in the corresponding ordinary least squares regression model. The first lag structure utilized number of motor vehicles in use as the dependent variable and the annual cumulative political violence events index as the independent variable.⁷⁴ It was found that a three degree polynomial with a five year lagged period produced the "best fit" structure for this relationship. There was minimal effect in the first year, no effect in the second through the fourth years and a significant effect in the fifth year. This pattern of effect was altered only slightly when armed attacks was used as the independent variable in the next iteration of the model.⁷⁵ A fourth polynomial with a five year lagged period produced the "best fit" structure. However, the effect was similar to the first model in that there was no significant effect until the fifth year. The impact of changes in political violence was not reflected in the number of motor vehicles in use until the fifth year.

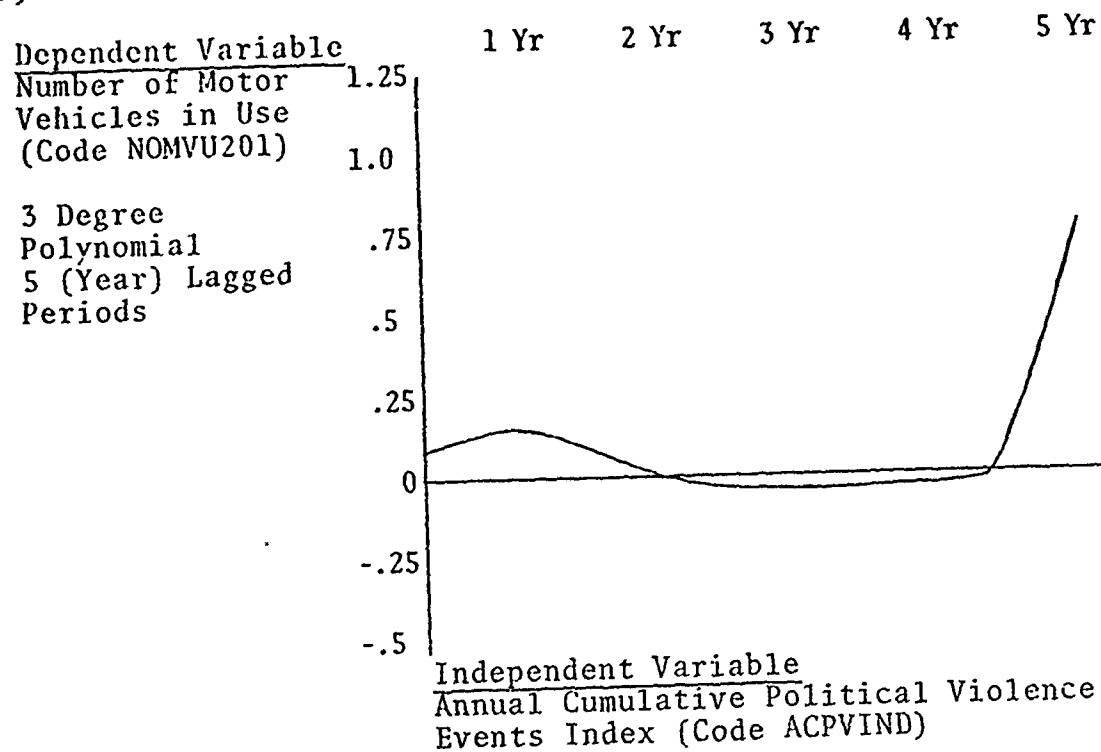
A lag structure which used the railway passenger/kilometers as the dependent variable and the annual cumulative political violence events index as the independent variable was constructed.⁷⁶ A fourth degree polynomial with a five

⁷⁴See Figure 12(a).

⁷⁵See Figure 12(b).

⁷⁶See Figure 13(a).

(a)



(b)

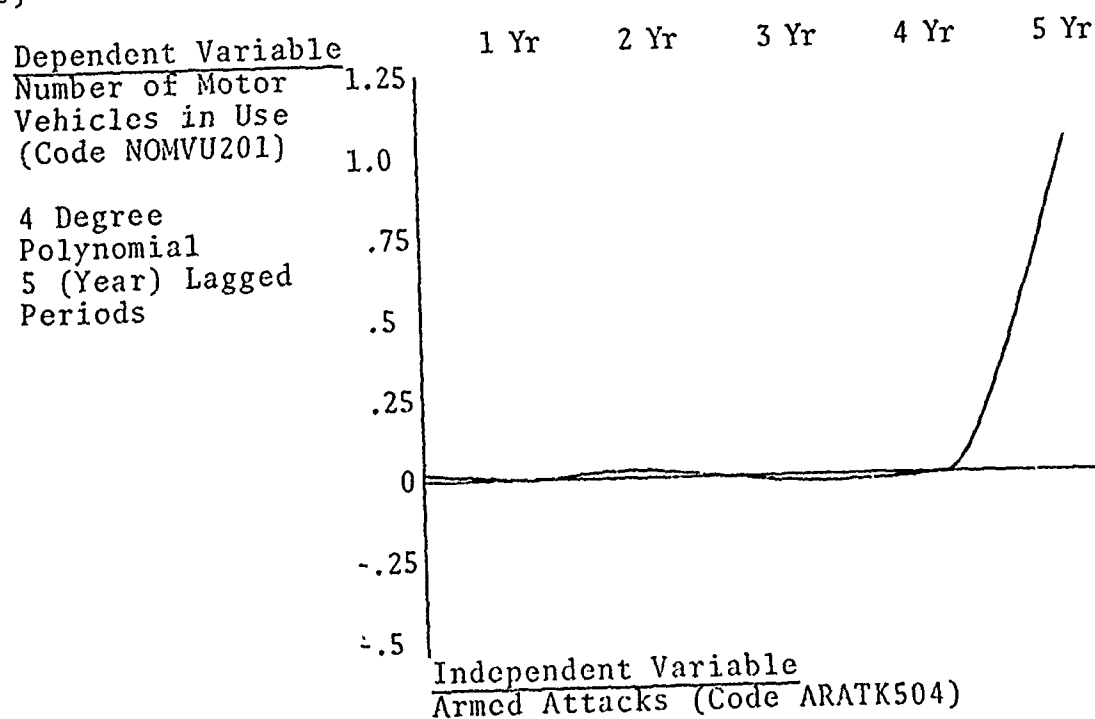
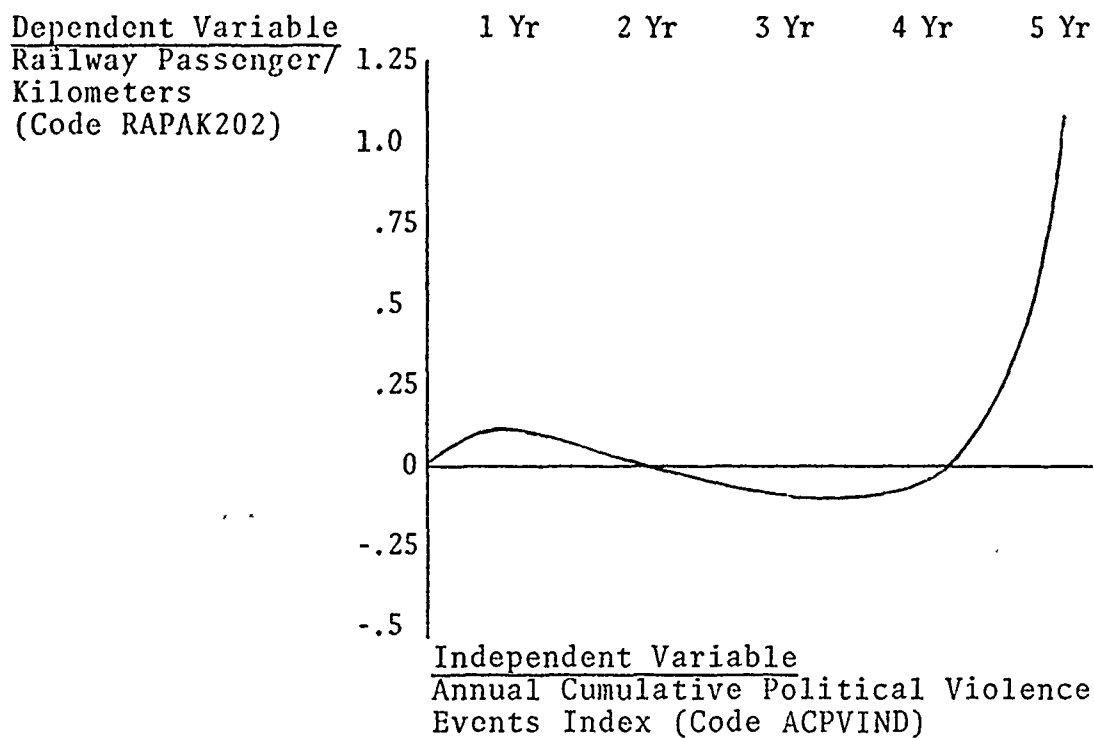


Fig. 12. Lag structures of number of motor vehicles in use.

(a)



(b)

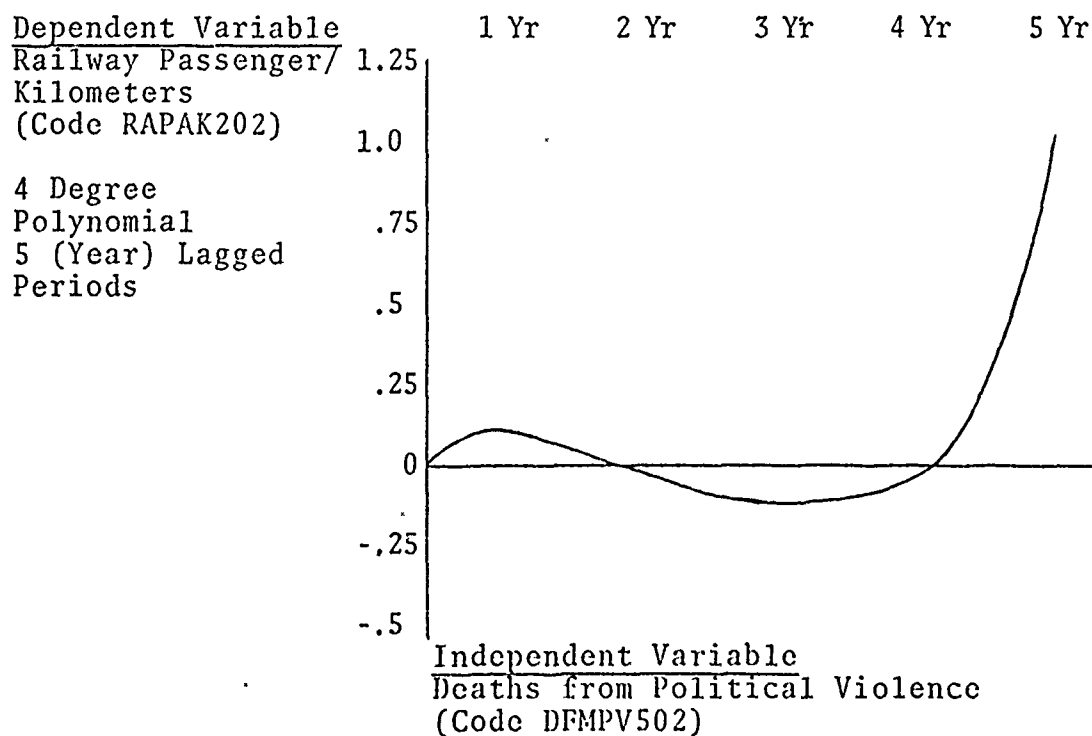


Fig. 13. Lag structures of railway passenger/kilometers.

year lagged period produced the "best fit" structure. There was a slight effect in the first year, no effect in the second year, a slight negative effect in the third year, no effect in the fourth year and a significant effect in the fifth year. In the next iteration of this lag structure, the independent variable was deaths from political violence.⁷⁷ The "best fit" lag structure in this case was a fourth degree polynomial with a five year lagged period. The results of this structure were almost identical with those of the first model. The impact of political violence was reflected in the railway passenger/kilometers in the fifth year.

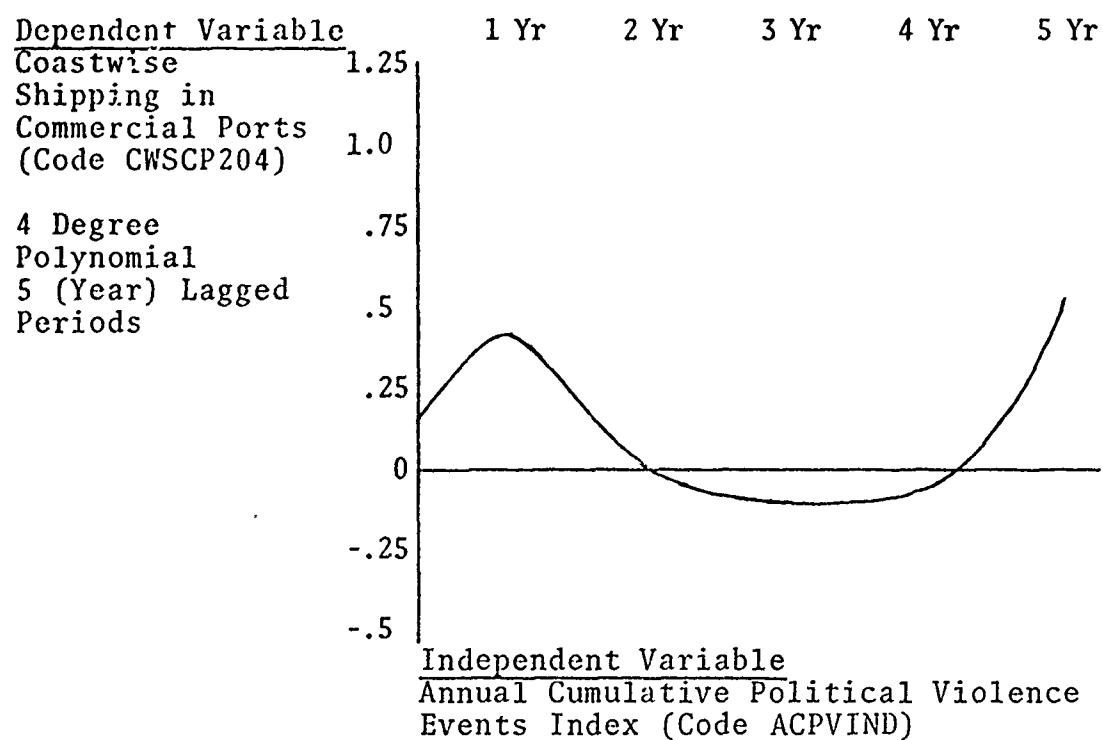
In the last set of lag structures in this series, the dependent variable in the first structure was coastwise shipping in commercial ports and the independent variable was the annual cumulative political violence events index.⁷⁸ The "best fit" model for this structure was a fourth degree polynomial with a five year lagged period. There was a significant lag effect in the first year which decreased to no effect in the second year and to a negative effect during the third and fourth years. There was significant lag effect in the fifth year. In the next iteration of this model, the independent variable was deaths from political violence.⁷⁹ The lag effects were similar to the first model except that they were less significant in the fifth year.

⁷⁷See Figure 13(b).

⁷⁸See Figure 14(a).

⁷⁹See Figure 14(b).

(a)



(b)

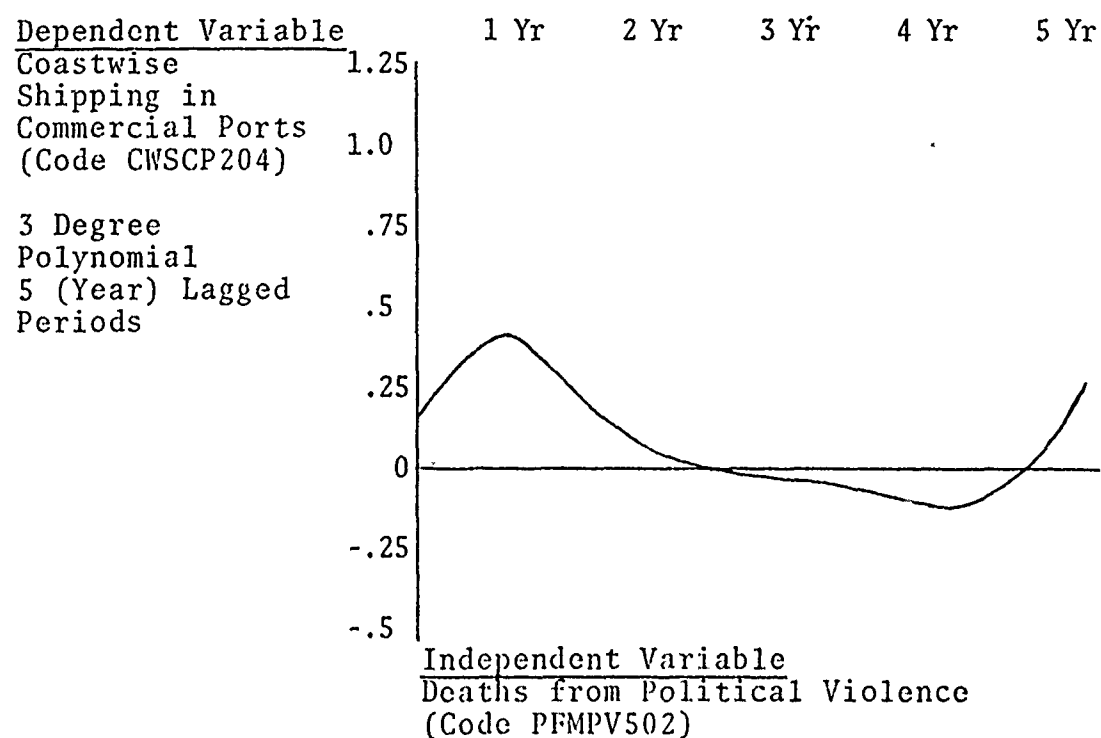


Fig. 14. Lag structures of coastwise shipping in commercial ports.

The impact of political violence was reflected in coastwise shipping in commercial ports during the first and fifth years.

Communications

Communications were important to the development of an economy. They were particularly important in the support which they provided for marketing operations. Communications were the essential voice of marketing operations. Domestic air post letters received and mailed, circulation of daily newspapers and average weekly radio broadcast hours as indicators of communications systems were structured into a series of multiple regression models as the dependent variable. The independent variable in this series of models were alternately the annual cumulative political violence events index and the five individual basic political violence indicators.

The first group of models in this series used domestic air post letters received and mailed, circulation of daily newspapers and average weekly radio broadcast hours as the dependent variable and the annual cumulative political violence events index as the explanatory variable.⁸⁰ The intercepts in all three models were positive and very significant. However, the annual cumulative political violence events index was significant at the 95 percent confidence level in only the domestic air post letters received

⁸⁰ See Tables 21 and 22.

and mailed model. This explanatory variable was significant in the circulation of daily newspapers and average weekly radio broadcast hours models at the 75 percent confidence level. The domestic air post letters received and mailed model had an over-all significant level of correlation. The over-all correlation in the remaining two models was insignificant. The test for autocorrelation for the circulation of daily newspapers model was in the inconclusive range. There was positive autocorrelation in the average weekly radio broadcast hours model.

The second group of models in this series used the same group of dependent variables and employed the five individual basic political violence indicators as independent variables.⁸¹ As in the first group of models, the intercepts were all positive and very significant. However, the significant explanatory variables differed widely among the models in this group. Deaths from political violence was the significant explanatory variable in the domestic air post letters received and mailed model. The circulation of daily newspapers had three significant explanatory variables: armed attacks, protest demonstrations and government sanctions. The over-all correlation in the domestic air post letters received and mailed and average weekly radio broadcast hours models was insignificant. The over-all correlation in the circulation of daily newspapers model was very significant. Also, the R^2 Bar in this model was .7257,

⁸¹Ibid.

indicating that the independent political violence variables in this model explained 72.57 percent of the deviation in the dependent variable. The test for autocorrelation in the average weekly radio broadcast hours model was in the inconclusive range.

The next series of models utilized slope and intercept dummy variables to test for institutional effects and structural changes. Only the domestic air post letters received and mailed were included in this series as the dependent variable.⁸² The independent variable in the series was alternately the annual cumulative political violence events index and the individual five basic political violence indicators. The first model was constructed using the dependent variable from the series and dummy variables which represented the annual cumulative political violence events index as the independent variable. Also, dummy intercept variables were used to separate the three political violence time periods. The intercept was positive and very significant in the "pre-insurgency" and "limited war" periods. The explanatory variable was significant only during the "insurgency" period. This indicated that parameter shifts had become institutionalized in the data during these time periods. Likewise, slope changes among the political

⁸²See Table 23. Also, data for circulation of daily newspapers and average weekly broadcast hours were available only for 1962 through 1972, covering only one political violence time period and part of a second period. Additionally, there were too few data points to effectively use the variables in models which employ slope and intercept dummy variables.

violence time periods had channeled the explanatory variable to its most significant political violence time period.

The second model in this series retained the series dependent variable, and the model was constructed using dummy variables which represented the individual five basic political violence indicators as the independent variable. Dummy intercept variables were also used in the model to separate the three political violence time periods. The intercept in this model was positive and highly significant during all three political violence time periods. The significant political violence explanatory variables were protest demonstrations, "insurgency" period and government sanctions, "limited war" period. It should be recalled that only the deaths from political violence variable was significant in the ordinary least squares model. The over-all correlation in the model was highly significant as indicated by an F-ratio of 47.539. The R^2 Bar for this model was .9474 which indicated that the independent variables explained 94.74 percent of the deviation in the dependent variable. The test for autocorrelation in this model was in the inconclusive range. As in the previous model, slope changes had resulted in structural shifts of the explanatory variables when the time periods were separated.

Two lag structures were constructed using domestic air post letters received and mailed as the dependent variable and alternately the annual cumulative political violence events index and deaths from political violence as the

independent variable. The first lag structure, which used the annual cumulative political violence events index as the independent variable, was based on a fourth degree polynomial with a five year lagged period.⁸³ There was a slight lag effect in the first year, no effect in the second year, very little negative lag effect in the third year, no effect in the fourth year and significant lag effect in the fifth year. The next iteration of the structure which used deaths from political violence as the independent variable was based on the same structure and resulted in similar effects with less severe swings in the normalized lag coefficients.⁸⁴ The significant effect of both indicators of political violence was reflected in domestic air post letters received and mailed in the fifth year.

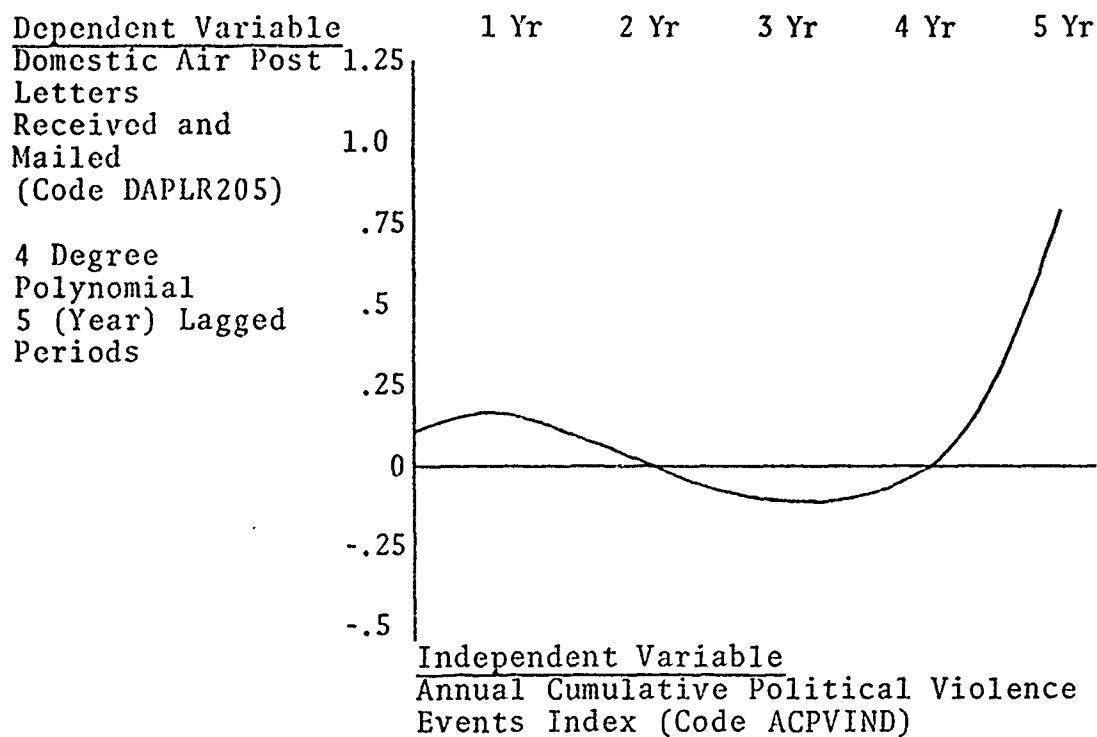
Banking System

A national banking system was essential to economic growth and development. The banking system was vital to the support of marketing operations. The number of checks presented for clearance was the barometer of national banking activity. This barometer was the dependent variable in the series of regression models which considered the impact of political violence on the development of the banking system. The independent explanatory variable in this series was alternately the annual cumulative political violence events

⁸³See Figure 15(a).

⁸⁴See Figure 15(b).

(a)



(b)

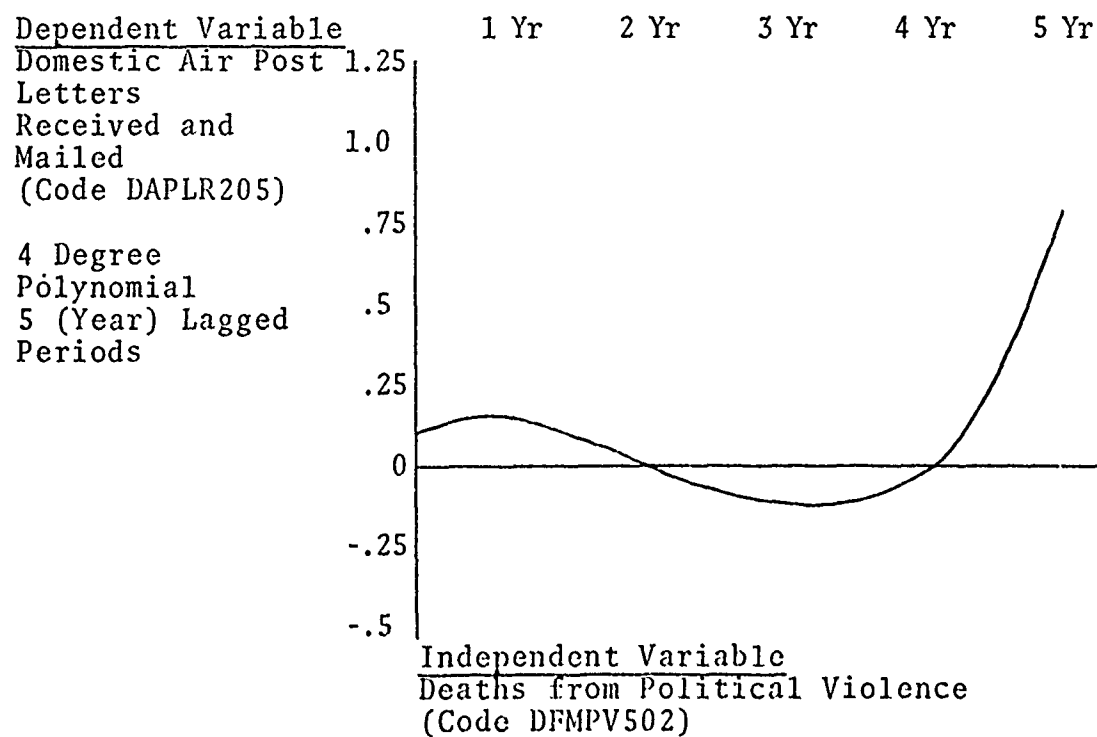


Fig. 15. Lag structures of domestic air post letters received and mailed.

index and the individual five basic political violence indicators. In this series, the first model which employed the series dependent variable and the annual cumulative political index variable had a positive and significant intercept. Also, the annual cumulative political violence events index was significant. The over-all correlation in the model was also significant as indicated by an F-ratio of 1.570. The R^2 Bar of the model was .2911. However, there was positive autocorrelation in the model. The series dependent variable was used in the next model along with the individual five basic political violence indicators as the explanatory variables. The intercept in this model was positive and very significant. The significant explanatory variables were armed attacks, protest demonstrations and government sanctions. The over-all model correlation was very significant as indicated by an F-ratio of 14.096. The R^2 Bar for this model was .7181, indicating that 71.81 percent of the deviation in the dependent variable was explained by the independent political violence indicators.

Next, a series of models was constructed utilizing slope and intercept dummy variables to separate the data into the three political violence time periods. The first model in this series used the number of checks presented for clearance as the dependent variable and dummy variables which represented the annual cumulative political violence events index and the individual five basic political violence indicators as the independent variables. These dummy variables were

used alternately in the models. Also, dummy variables were created for the intercepts in the models.⁸⁵ The first model in this series used the series dependent variable and the annual cumulative political violence events index as the explanatory variable. The intercepts were positive but significant in only the "pre-insurgency" and "limited war" periods. The explanatory variable was insignificant in any of the political violence time periods. However, the over-all model was significant. The R^2 Bar of the model was .3025. The test for autocorrelation in this model was in the inconclusive range. The insignificance in one time period may have been an indication that the data exhibited strong institutional effects in the two significant political violence time periods. Obviously, the effects were magnified during the two significant time periods.

The second model in this series was constituted using the series dependent variable and the individual five basic political violence variables as the independent variables. Also, dummy variables were used for the intercepts.⁸⁶ As in the first model, the intercepts were positive but significant in only the "pre-insurgency" and "limited war" periods. The significant individual political violence variables were protest demonstrations in the "limited war" period and government sanctions during the "limited war" period. The over-all correlation in the model was significant as indicated by an

⁸⁵See Table 23.

⁸⁶Ibid.

F-ratio of 13.141. The R^2 Bar of the model was .6915 which indicated that the political violence variables explained 69.15 percent of the deviation in the dependent variable. There was autocorrelation in the model. It should be noted that armed attacks, which was an explanatory variable in the ordinary least squares model, was insignificant in this model. These structural changes in the explanatory variables resulted from channel effects which caused the most potent explanatory variables to be retained in the model.

As an exception, which was largely due to the unusual availability of reported quarterly data for number of checks presented for clearance, a series of models was constructed using this indicator as the dependent variable. The corresponding quarterly cumulative political violence events index and the quarterly five basic indicators of political violence were alternately used as the explanatory variable in this series.⁸⁷ A major purpose for introducing the quarterly data was to determine if the significance of the association between the quarterly dependent indicator of banking operations and quarterly indicators of political violence improved in strength over the annual data models. The first model constructed used the series dependent variable and the quarterly cumulative political violence events index as the independent variable. The intercept in this model was much higher and more significant than in the annual model. Also, the T-ratio on the independent variable increased from 2.56 in the annual

⁸⁷See Table 24.

TABLE 24

THE IMPACT OF POLITICAL VIOLENCE ON THE QUARTERLY DEVELOPMENT OF SELECTED INFRASTRUCTURE

Dependent Variable \ Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code 501A) ^d	Deaths from Political Violence (Code 502A)	Armed Attacks (Code 504A)	Protest Demonstrations (Code 506A)	Government Sanctions (Code 507A)
Number of Checks Presented for Clearance (000,000)	109,700 ^a (10.26) ^b	- ^c	-	-	-	-
(Code REALQTRNCRFC208C)	98,710 (11.10)	4,423 (2.73)	-1.926 (1.62)	45.49 (5.80)	-	-
Per Capita Electric Energy Consumption (000 KWH)	119.2 (11.18)	-	-	-	-	-
(Code REALELCPR0213C)	109.0 (12.61)	3.839 (2.44)	-.00501 (1.30)	.04956 (6.50)	-	-
Quarterly Rubber Production (000 Metric Tons)	15.94 (21.35)	-	-	-	-	-
(Code REALANRU302C)	15.87 (21.19)	-	-	-.002215 (4.67)	-	-.002215 (4.67)

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing a computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model are reported. Independent variables not included in the model.

^dVariables have been coded for ease in computer application.

TABLE 24

SELECTED INFRASTRUCTURE SYSTEMS AND THE PRODUCTION OF A KEY AGRICULTURAL COMMODITY

Protest Stratations (Code 506A)	Government Sanctions (Code 519A)	Cumulative Political Violence Events Index (Code QCPVINDQA)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
-	-	3.134 (3.44)	.1443	.1443	11.804	1.671	3.987	.872	.288
-	-	-	.4245	.4078	16.721	1.671	2.749	.650	.705
-	-	.003917 (4.30)	.2092	.2092	18.523	1.671	3.987	.840	.349
-	-	-	.4953	.4806	22.241	1.671	2.749	.661	.681
-	-	-.0002978 (4.65)	.2359	.2359	21.614	1.671	3.987	.183	1.669
-	-.02497 (.44)	-	.2503	.2396	11.519	1.671	3.138	.116	1.812

Processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360

included in the model are indicated by - .

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model to 3.44 in the quarterly model. Also, the over-all significance of the correlation in the model improved from an F-ratio of 6.570 in the annual model to 11.804 in the quarterly model. There was also positive autocorrelation in the quarterly model as was the case in the annual model.

The second model in this series used the series dependent variable and the individual five basic political violence variables as independent variables.⁸⁸ The slope in this model was also positive and very significant. The significant explanatory variables were riots and armed attacks. The deaths from political violence variable was marginally significant. Note that armed attacks, protest demonstrations and government sanctions were the significant explanatory variables in the corresponding annual data model. The over-all correlation in this model was very significant as indicated by an F-ratio of 16.721. The test for autocorrelation in this model was in the inconclusive range.

The last series of models, which was constructed to evaluate the impact of political violence on banking operations, used slope and intercept dummy variables to separate the data in the three political violence time periods. The dependent variable in this series was the number of checks presented for clearance. The independent variable was alternately dummy variables used to represent the quarterly cumulative political violence events index or and the individual five basic political violence indicators. Also,

⁸⁸ See Table 24.

dummy intercept variables were used in the model.⁸⁹ The first model in the series used the series dependent variable and the quarterly cumulative political violence events index as the independent variable. All the intercepts in this model were positive and significant. The intercept T-ratio in the "limited war" time period was very significant. However, as in the annual model which utilized dummy variables, the independent variable was insignificant. The over-all model was highly significant as indicated by an F-ratio of 23.804. There was autocorrelation in this model. Again, this structural shift in the significant explanatory variables indicated that the potency of the variable had changed due to separation of the political violence time periods, among other things.

The last model in this series was constructed using the series dependent variable and the individual five basic political violence variables as independent variables. Also, dummy intercept variables were used in the model. The intercepts in this model were all positive in each time period and highly significant. The significant individual political violence variables were: riots, "limited war" period; deaths from political violence, "limited war" period; and armed attacks, "limited war" period. It should be noted that these explanatory variables were different from the ones found in the corresponding annual data dummy variable model. The test for autocorrelation in this model was in the inconclusive

⁸⁹See Table 25.

TABLE 25
THE IMPACT OF POLITICAL VIOLENCE ON QUARTERLY DEVELOPMENT OF SELECTED INFRASTRUCTURE

Dependent Variable	Independent Variable(s)	Institutional Effects (Shift Parameters) ^a			Structural Changes (Slope Changes)									
		Intercept (Regression Coefficient)(T-Ratio)			Riots (Code 501A)			Deaths from Political Violence (Code 502A)			Armed Attacks (Code 504A)			Protest Demonstrations
		BDUMQY0 ^d 1955-60	BDUMQY1 1961-64	BDUMQY2 1965-72	BRDUMQY0 1955-60	BRDUMQY1 1961-64	BRDUMQY2 1965-72	EDDUMQY0 1955-60	EDDUMQY1 1961-64	EDDUMQY2 1965-72	BADUMQY0 1955-60	BADUMQY1 1961-64	BADUMQY2 1965-72	PPDUMQY0 1955-60
Number of Checks Presented for Clearance (000,000)	(Code REALQYANCPFC204C)	53,320 ^b (4.06)	82,640 (5.13)	220,600 (13.93)	- ^c	-	-	-	-	-	-	-	-	-
Per Capita Electric Energy Consumption (000 kWh)	(Code REALECCPRO213C)	53,320 (5.56)	82,640 (7.04)	188,800 (14.76)	-	-	6,311 (5.98)	-	-	-4,729 (5.99)	-	-	38.80 (7.48)	-
Quarterly Rubber Production (000 Metric Tons)	(Code REALANUS02C)	59.50 (4.27)	96.27 (5.62)	235.3 (15.61)	-	-	-	-	-	-	-	-	.02380 (5.29)	-
		58.94 (5.66)	95.78 (7.36)	188.7 (14.21)	-	-	2,628 (1.56)	-	-	-	-	-	-	-
		18.38 (15.43)	2,505 (11.01)	11.0 (8.54)	-	-	-	-	-	-	-	-	-	-
		17.01 (14.64)	18.92 (13.29)	10.30 (6.44)	-	-	-	-	-	-	-	-	-.001201 (2.46)	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

^eIntercept dummy variables have been generated to detect shift parameters between the three time periods of the study.

^fSlope dummy variables have been generated to detect slope changes between the three time periods of the study.

TABLE 25

EFFECT OF SELECTED INFRASTRUCTURE SYSTEMS AND THE PRODUCTION OF A KEY AGRICULTURAL COMMODITY

Structural Changes (Slope Changes) ^f										R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson		
(Code 504A)		Protest Demonstrations (Code 506A)				Government Sanctions (Code 519A)			Cumulative Political Violence Events Index (Code QCPVINDQA)									
Y1 1955-60	Y2 1961-64	Y1 1955-60	Y2 1961-64	Y1 1965-72	Y2 1965-72	Y1 1955-60	Y2 1960-64	Y2 1965-72	Y1 1955-60	Y1 1961-64	Y2 1965-72							
-	-	-	-	-	-	-	-	-	-	-	-.6138 (.78)	.5870	.5688	23.804	1.671	2.521	.985	.108
-	38.80 (7.48)	-	-	-	-	-	-	-	-	-	-	.7870	.7709	40.032	1.671	2.244	.383	1.222
-	-	-	-	-	-	-	-	-	-.002729 (.09)	-.001776 (.11)	-.000007289 (.01)	.6628	.6372	21.289	1.671	2.244	.960	.170
-	.02380 (5.29)	-	-	-	-	-	-	-	-	-	-	.7633	.7492	42.565	1.671	2.362	.715	.592
-	-	-	-	-	-	-	-	-	-.006644 (2.62)	-.004383 (3.30)	-.0001265 (1.57)	.5188	.4823	11.679	1.671	2.244	.086	1.925
-	-.001201 (2.46)	-	-	-	-	-	-	.06105 (1.01)	-	-	-	.4240	.3896	9.717	1.671	2.362	-.098	2.308

were computer package in an IBM-360 computer system

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range. The over-all correlation in the model was highly significant as indicated by an F-ratio of 40.032. The R^2 Bar of the model was .7709 which indicated that the political violence variables had explained 77.09 percent of the deviation in the dependent variable.

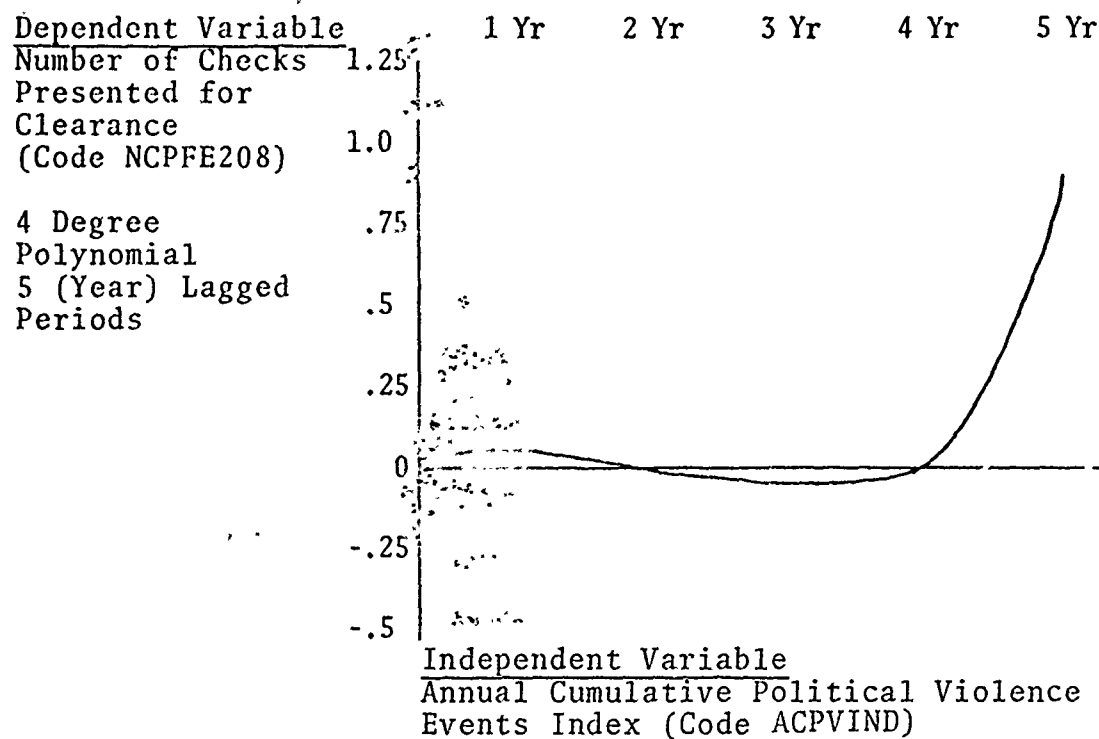
Three lag structures were constructed to test the significance and duration of the lag effect of political violence on the number of checks presented for clearance. The first lag structure used the number of checks presented for clearance as the dependent variable and the annual cumulative political violence events index as the independent variable.⁹⁰ The "best fit" structure was a fourth degree polynomial with a five year lagged period. There was a minor effect in the first year, no effect in the second year, minor negative effect in the third year, no effect in the fourth year and a significant effect in the fifth year. The second iteration of the lag structure used the same dependent variable and deaths from political violence as the independent variable.⁹¹ The "best fit" lag structure was the same as in the first model. There was no lagged effect until the fifth year, at which point it became very significant.

The final lag structure was based on quarterly data. The same dependent variable, number of checks presented for clearance, was used. The independent variable was armed

⁹⁰See Figure 16(a).

⁹¹See Figure 16(b).

(a)



(b)

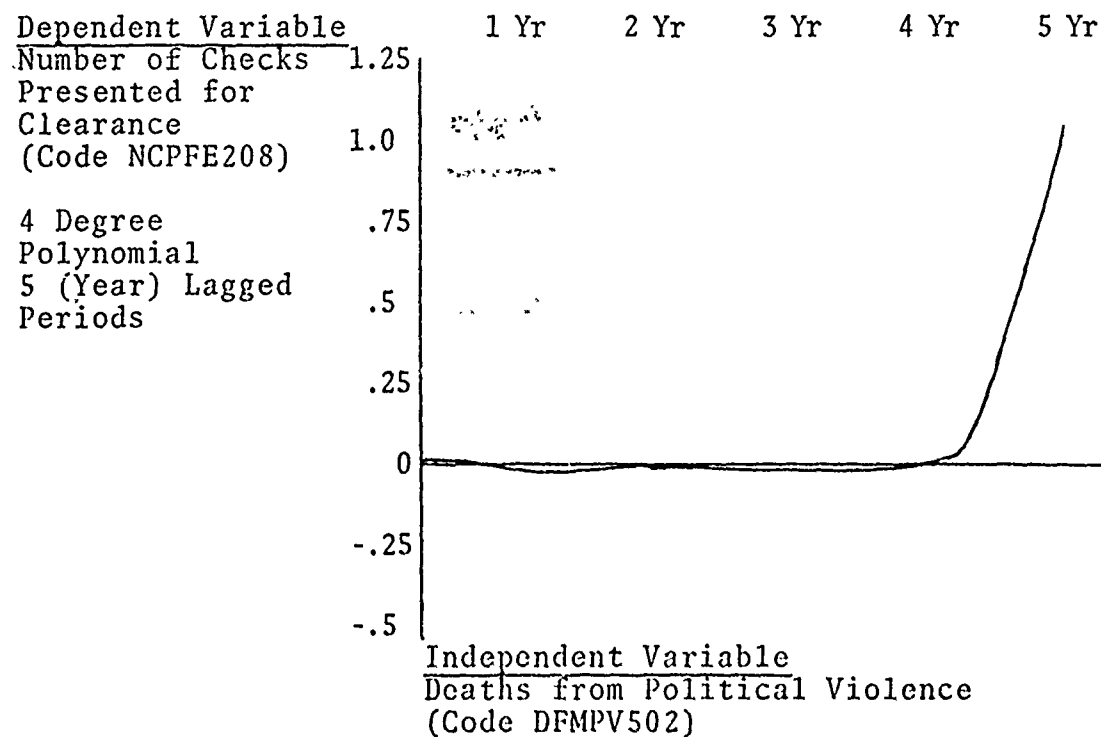


Fig. 16. Lag structures of annual number of checks presented for clearance.

attacks.⁹² The "best fit" structure was a fourth degree polynomial for a twenty quarters lagged period. The lag effect was mild but increased from the first through the fifteenth quarter, and then declined to a slight negative in the sixteenth quarter and continued this trend to a very significant negative at the close of the twentieth quarter.

Marketing Middlemen

Both the number of businesses and the volume of business conducted by marketing firms in South Vietnam were indicators of the development of this economic sector. The following four indicators of this development were structured into a series of multiple regression models as the dependent variable: percent of the business patente licenses--less than 500 VN\$, percent of the business patente licenses for 500-2,999 VN\$, percent of business patente licenses for public works contractors and number of commercial establishments. The first three dependent indicators measured the volume of business conducted while the last indicator measured the number of marketing firms. The explanatory variable was alternately the annual cumulative political violence events index and the individual five basic political violence indicators.⁹³

The first group of models in this series used the series dependent variables and the annual cumulative political

⁹²See Figure 17.

⁹³See Table 21.

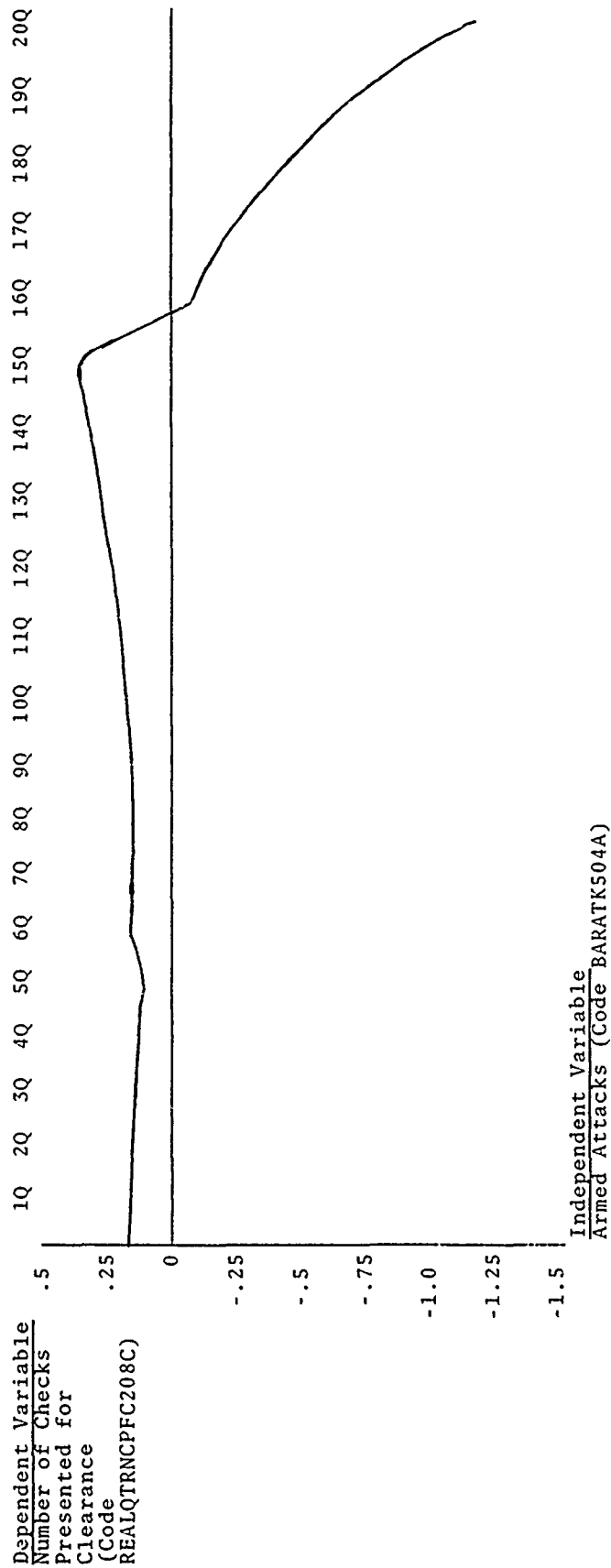


Fig. 17. Lag structures of quarterly number of checks presented for clearance.

violence events index as the independent variable.⁹⁴ The intercepts in all of the models were positive and significant, except in the percent of business patente licenses for public works contractors model. All of the explanatory variables were significant, except in the number of commercial establishments model. All of the models had significant over-all correlation, except in the number of commercial establishments model. All of the models had positive autocorrelation, except in the percent of business patente licenses for public works contractors which was in the inconclusive range.

The second group of models in this series also used the series dependent variables and the individual five basic political violence indicators as the independent variables.⁹⁵ The intercepts in all models in this group were positive and very significant. The significant explanatory variables differed among models. Protest demonstrations and government sanctions were significant in three of the models. Armed attacks was significant in two models. Deaths from political violence was significant in only one model. The over-all correlation in three of the models was significant. The R^2 Bar values were also very high in three of the models. Autocorrelation conditions were reported in the number of commercial establishments model, and the test for autocorrelation was in the inconclusive range in the percent of

⁹⁴Ibid.

⁹⁵Ibid.

business patente licenses--less than 500 VN\$ model and in the percent of business patente licenses for public works contractors model.

The next series of models was constructed using the same dependent variables from the previous series but using dummy variables to represent alternately the annual cumulative political violence events index and the individual five basic political violence indicators. Also, dummy intercept variables were used in this series. These models were generated to test the homogeneity of the slopes and intercepts to aid in determining if the data should have been separated into the three political violence time periods.

The first group of models used the series dependent variables and the annual cumulative political violence events index as the independent variable. Also, dummy intercept variables were used in the models.⁹⁶ The reported intercepts were all positive but they were not significant in all three time periods. In the percent of business patente licenses for 500-2,999 VN\$ model the intercept was not significant in the "insurgency" period. In the percent of business patente licenses for public works contractors model the intercept was significant only in the "limited war" period. The explanatory variable, the annual cumulative political violence events index, was not significant in any of the political violence time periods in any of the models. The potency of this explanatory variable was demonstrated in

⁹⁶See Table 23.

three of the four models which did not employ slope and intercept dummy variables. Again, there was an indication that the intercepts in these models had taken up the significance and that there were strong shift parameters which had become institutionalized in the data. These shifts were further confirmed by the high T-ratios on the intercept dummy variables as compared with the ordinary least squares models. Two of the four models exhibited over-all correlation conditions which were significant. There were positive autocorrelation conditions in all of the models, except the number of commercial establishments model, which was in the inconclusive range.

The last group of models in this series used the series dependent variables and the individual five basic political violence indicators as the independent variables. Also, intercept dummy variables were used in the models.⁹⁷ All the model intercepts were positive and significant except the percent of the business patente licenses for 500-2,999 VN\$ model during the "insurgency" period and the percent of the business patente licenses for public works contractors model during the "pre-insurgency" periods. As in the previous group in this series, the significant explanatory variables in these models differed from those in the corresponding ordinary least squares models. The significant explanatory variables for the percent of the business patente licenses--less than 500 VN\$ model were: armed attacks, "limited war"

⁹⁷ Ibid.

period; protest demonstrations, "limited war" period; and government sanctions, "limited war" period. The significant explanatory variable for the percent of the business patente licenses for 500-2,999 VN\$ model was government sanctions in the "limited war" period. The significant independent variables for the percent of business patente licenses for public works contractors model were deaths from political violence and government sanction in the "limited war" period. There were no significant independent variables for the number of commercial establishments model. The over-all correlation in this group of models was very significant except in the number of commercial establishments model in which the over-all correlation was insignificant. The test for autocorrelation in all four models placed them in the indeterminate range. The intercepts in this group of models did not take up as much of the significance in the models as was apparent in the first group. The effects of political violence in the three time periods on marketing operation continued to be reflected in the change of significant explanatory variables between the dummy models and the OLS models.

A series of Almon lag structures were developed to measure the duration of the lagged periods and the significance of the lagged structures. The dependent variables of the previous series were the dependent variables in these structures. The dependent variables of the previous series were the dependent variables in these structures. The annual cumulative political violence events index and the

individual five basic political violence indicators were the independent variable.

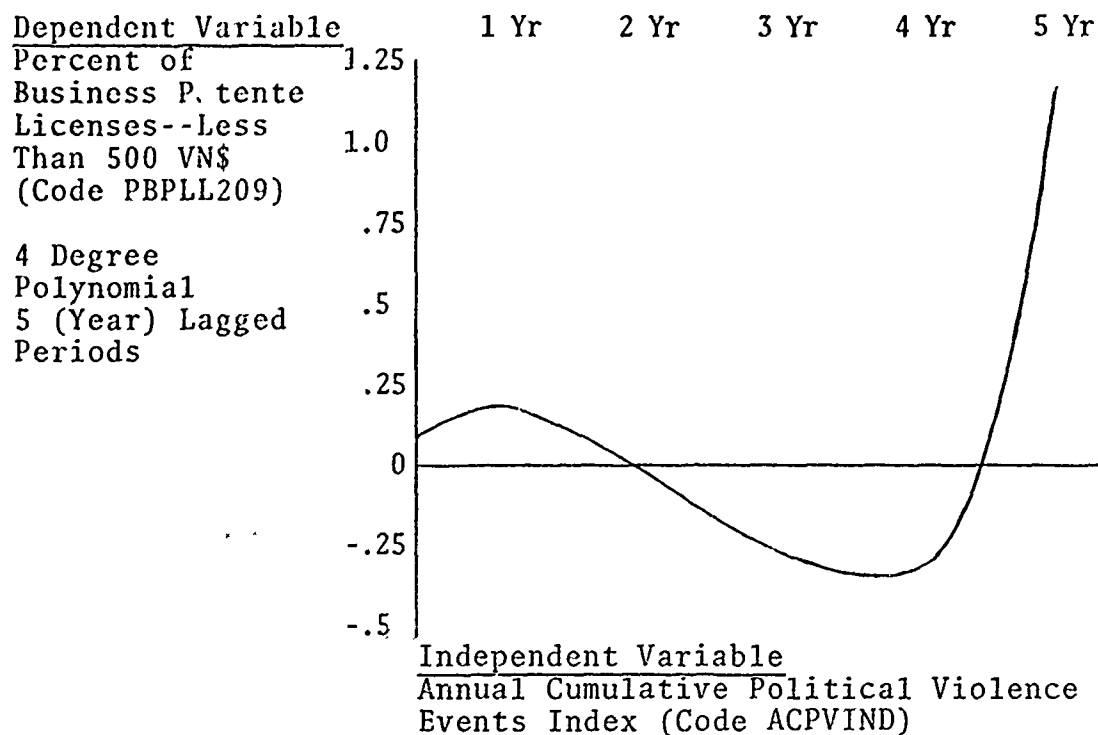
The first model in this set of lag structures was constructed using the percent of business patente licenses--less than 500 VN\$ as the dependent variable and the annual cumulative political violence events index as the independent variable.⁹⁸ The "best fit" structure was a fourth degree polynomial with a five year lagged period. There was a slight lag effect in the first year, no lag effect in the second year, a significant negative lag effect in the third year, a slight negative lag effect in the fourth year and a significant lag effect in the fifth year. The second lag structure in this pair of structures employed the same dependent variable and armed attacks became the independent variable.⁹⁹ The structure of the previous lag also produced the "best fit" for this lag structure. The effect in the first four years was insignificant and the full significant effect was contained in the fifth year. The impact of political violence was reflected in this indicator of small business activity after five years.

The next set of lag structures used the percent of business patente licenses for 500-2,999 VN\$ as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent

⁹⁸See Figure 18(a).

⁹⁹See Figure 18(b).

(a)



(b)

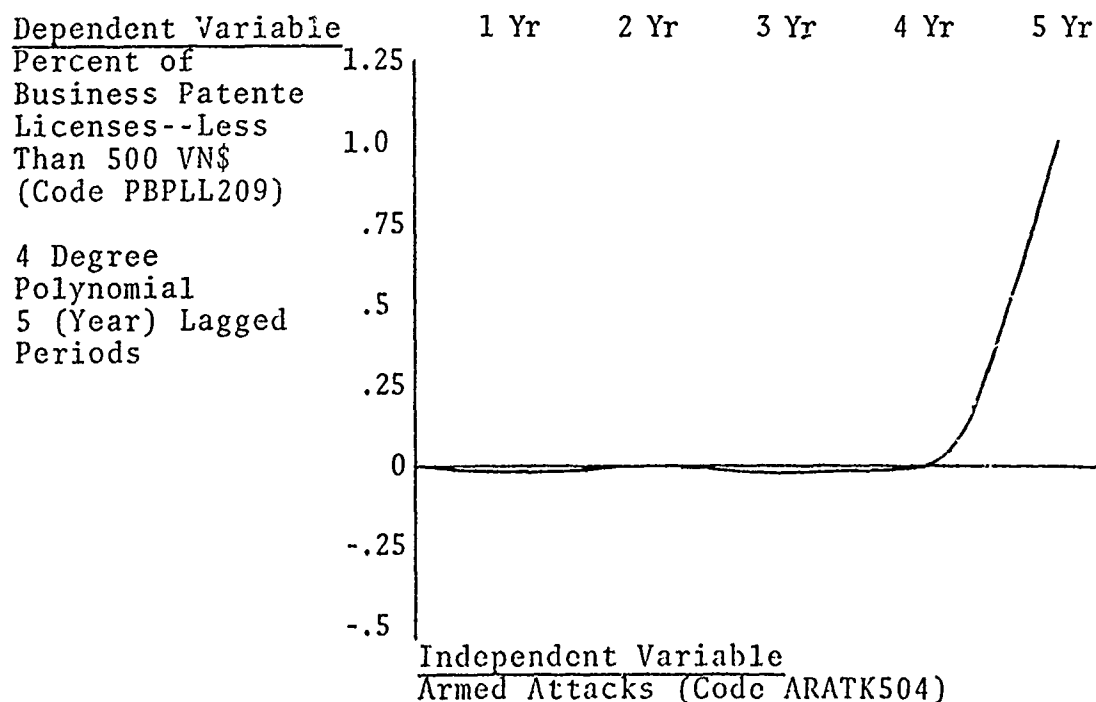


Fig. 18. Lag structures of percent of business patente licenses--less than 500 VN\$.

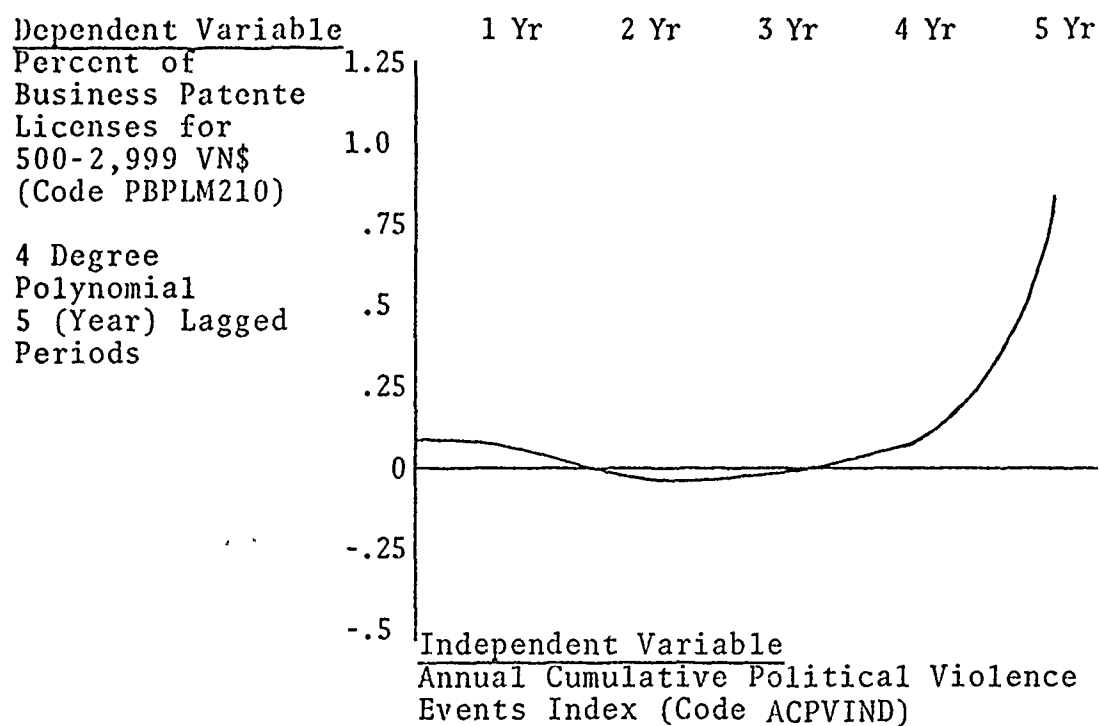
variable.¹⁰⁰ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. In the first structure, which used the annual cumulative political violence events index and armed attacks as the independent variable, the effect was mild to insignificant in the first four years and there was a significant lag effect in the fifth year. In the second structure, which used armed attacks as the independent variable, there was no significant effect in the first four years and a strong significant effect in the fifth year. As in the previous set of lag structures, the impact of political violence was reflected in this indicator of medium volume business activity after five years.

The next set of lag structures used the percent of business patente licenses for public works contractors as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent variable.¹⁰¹ The "best fit" model, for the structure which used the annual cumulative political violence events index as the independent variable, was a fourth degree polynomial with a five year lagged period. There was a significant lag effect in this structure during the first year and then the effect declined to no significance in the fifth year. In the second lag structure in which armed attacks was the independent variable, the "best fit"

¹⁰⁰ See Figure 19(a) and 19(b).

¹⁰¹ See Figure 20(a) and 20(b).

(a)



(b)

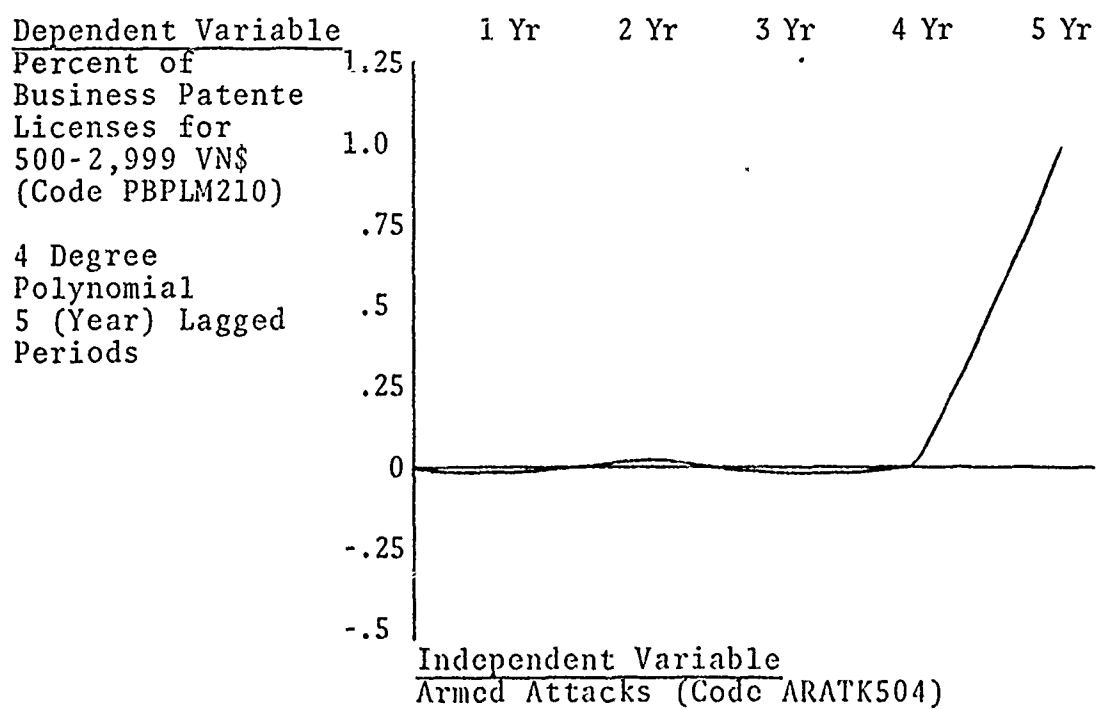
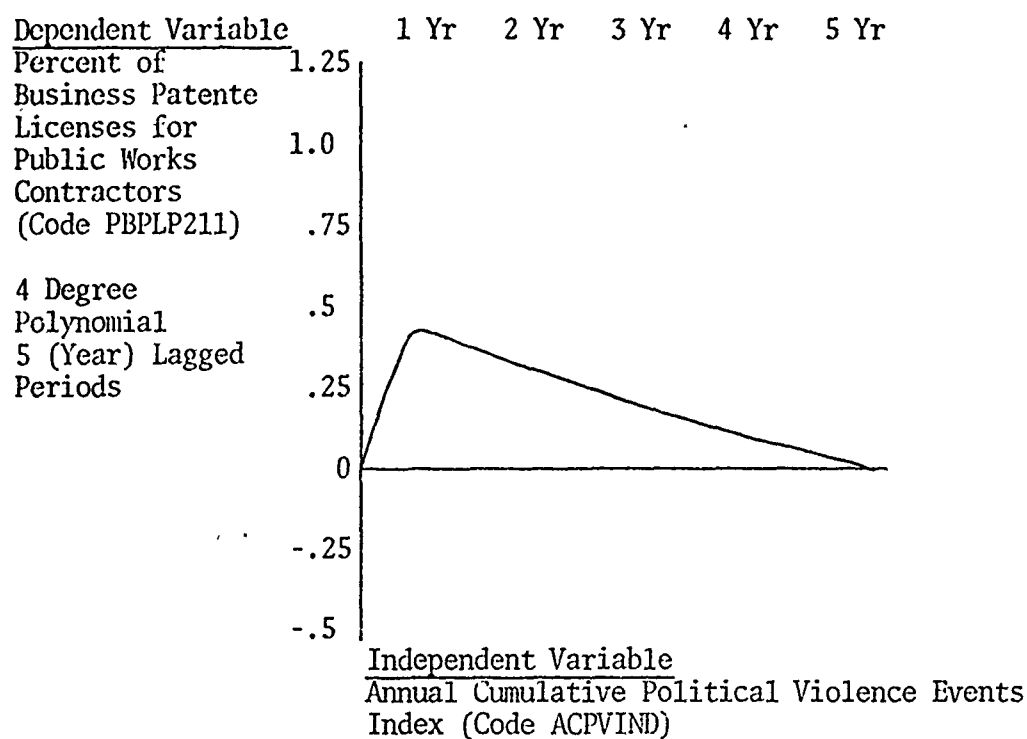


Fig. 19. Lag structures of percent of business patente licenses for 500-2,999 VN\$.

(a)



(b)

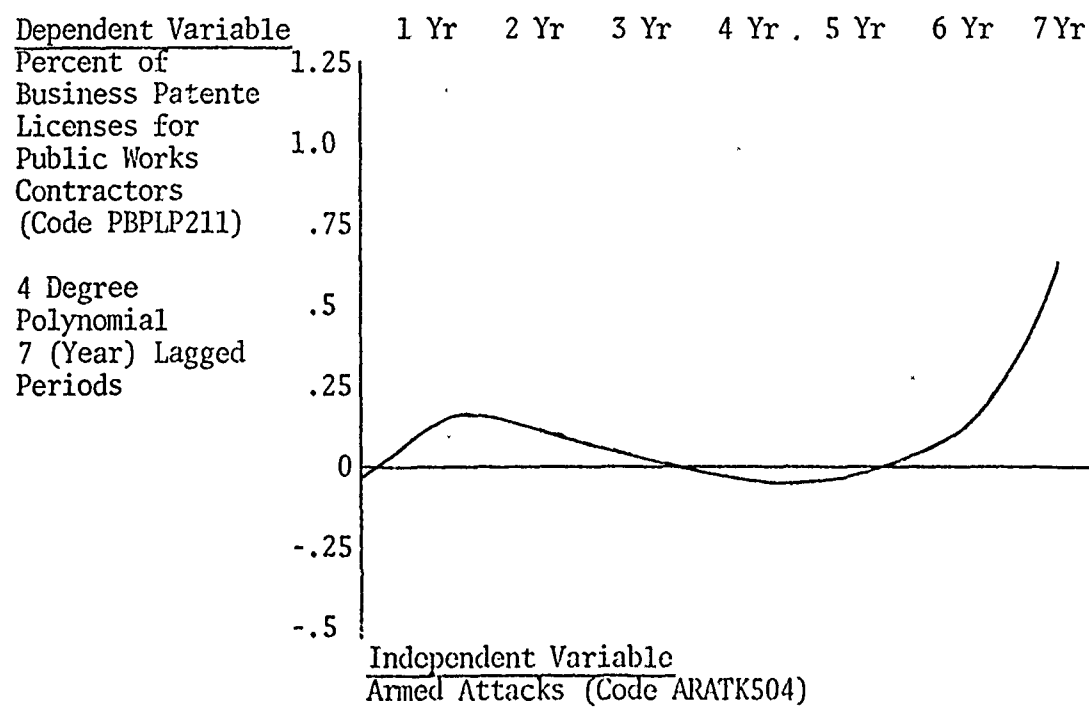


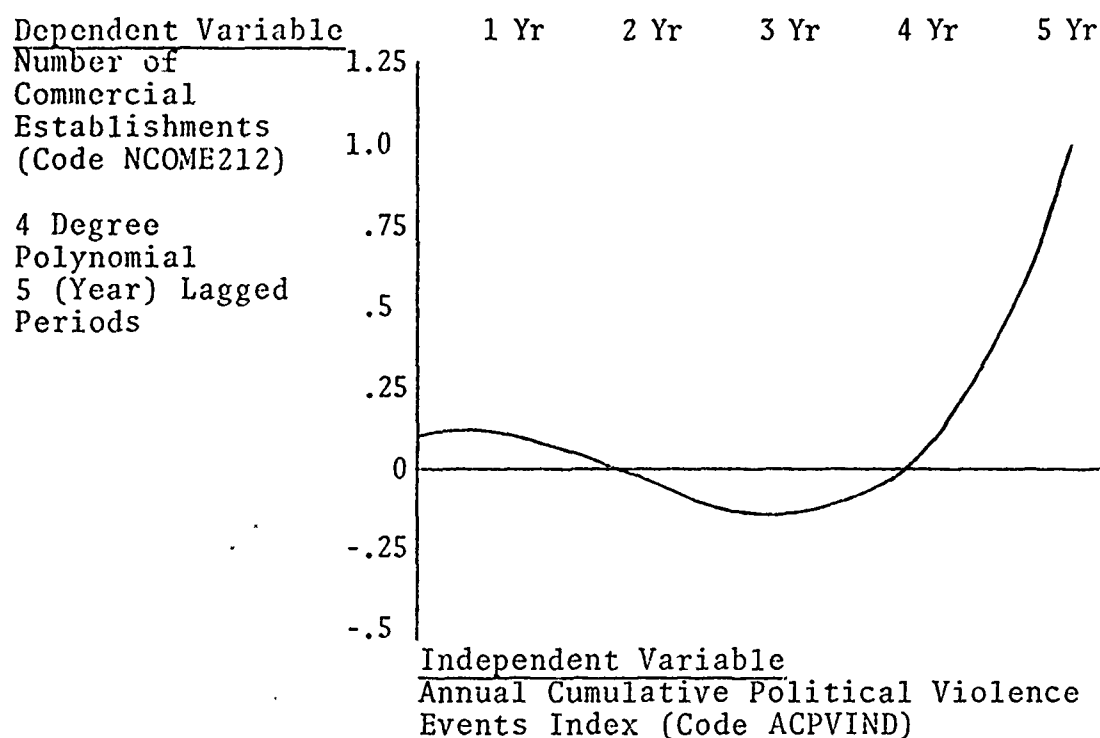
Fig. 20. Lag structures of percent of business patente licenses for public works contractors.

structure was a fourth degree polynomial with a seven year lagged period. There was a significant effect in this structure during the first year. This effect declined to no effect by the third year and remained at that level until the sixth year in which there was a mild lag effect which increased to a significant level in the seventh year. The lagged impact of political violence on this indicator of government-sponsored business activity was partially reflected in the first year and had a long term effect which extended to the seventh year.

The final set of lag structures in this series used the number of commercial establishments as the dependent variable and the annual cumulative political violence events index and deaths from political violence alternately as the independent variable.¹⁰² The "best fit" structure for both lag models was a fourth degree polynomial with a five year lagged period. The lag effect was the same in both structures. There was a mildly significant effect in the first year, no effect in the second year, a mild negative effect in the third year, no effect in the fourth year and a significant effect in the fifth year. The impact of political violence on the number of commercial establishments was mildly reflected in the first and third years and there was a significant effect in the fifth year.

¹⁰²See Figure 21(a) and 21(b).

(a)



(b)

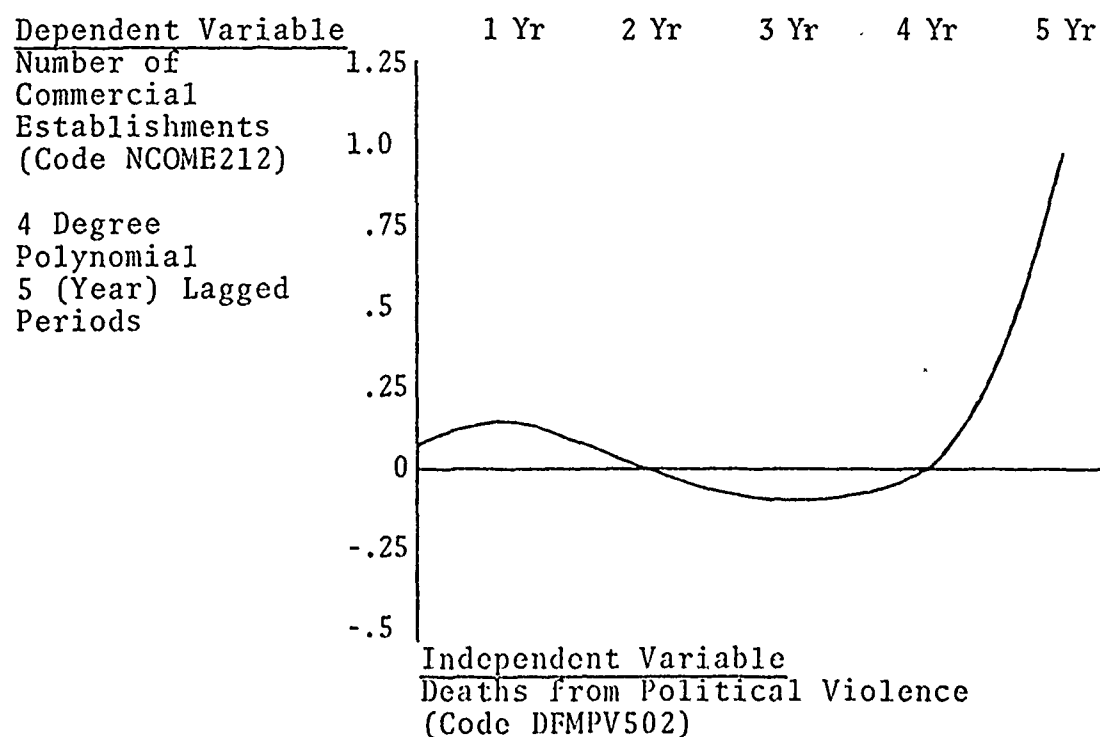


Fig. 21. Lag structures of number of commercial establishments.

Utilities

Utilities are a key infrastructure development indicator. Per capita electric energy consumption which was used in this study was particularly important to the development and growth of marketing and related activities. This indicator was structured into a series of multiple regression models as the dependent variable. In the first group of models in this series, the explanatory variable was alternately the annual cumulative political violence events index and the independent five basic political violence indicators. In the second group of models in this series, dummy variables were introduced which represented the independent variables. Also, dummy intercept variables were used to separate the data into the three political violence time periods. Per capita electric energy consumption was retained in this group of models as the dependent variable.

The first model in this group, which used annual per capita electric energy consumption as the dependent variable and the annual cumulative political violence events index as the explanatory variable,¹⁰³ had a positive and very significant intercept. Also, the explanatory variable was very significant. The over-all correlation in the model was very significant as indicated by an F-ratio of 11.549. The R^2 Bar for the model was .4192. Autocorrelation in the model was near the inconclusive range.

¹⁰³ See Table 21.

The second model in this group, which was based on quarterly data, used the same dependent variable and the quarterly cumulative political violence events index as the explanatory variable.¹⁰⁴ The intercept in this model was positive and higher and it was also very significant. The significant level of the quarterly cumulative political violence events index was higher in this model than the corresponding index was in the annual data model. The T-ratio increased from 3.40 in the annual data model to 4.30 in the quarterly data model. The over-all significance in this model improved over the annual model as indicated by an F-ratio of 18.523. The Durbin-Watson statistic indicated that there was positive autocorrelation in this model.

The third model in the second group of models used the series dependent variable based on annual data and the individual five basic political violence indicators.¹⁰⁵ The intercept in this model was positive and very significant. The explanatory variables, which were significant at the 95 percent confidence level, were riots and armed attacks. Pro-test demonstrations was significant at the 85 percent confidence level. The correlation in the over-all model was very significant as indicated by an F-ratio of 12.108. The R^2 Bar of the model was .6847, which indicated that 68.47 percent of the deviation in the dependent variable was explained by the group of independent variables.

¹⁰⁴See Table 24.

¹⁰⁵See Table 21.

The fourth model in this group of models used the series dependent variable on a quarterly basis and the individual five basic political violence indicators as the explanatory variables.¹⁰⁶ The intercept in this model was higher than in the annual model and was very significant. The explanatory variables in the model, which were significant at the 95 percent confidence level, were riots and armed attacks. These same explanatory variables were significant in the annual data model. Also, deaths from political violence was significant at the 90 percent confidence level. There was positive autocorrelation in this model.

The first model in the second group of models used the series dependent variable based on annual data and the annual cumulative political violence events index as the explanatory variable. Also, dummy intercept variables were used to separate the data into the three time periods.¹⁰⁷ The intercepts were positive but were significant in only the "pre-insurgency" and "limited war" time periods. Likewise, the independent variable was significant in only the "insurgency" period. The over-all correlation in the model was very significant at an F-ratio of 17.194. The R^2 Bar of the model was .7495. Again, it appeared that much of the significance in the model was taken up by the intercepts indicating that significant shift parameters had become institutionalized in the data.

¹⁰⁶ See Table 24.

¹⁰⁷ See Table 23.

The second model in this second group of models used the series dependent variable based on quarterly data and the quarterly cumulative political violence events index as the explanatory variable.¹⁰⁸ In this model all of the intercepts were positive and very significant. However, the explanatory variable was insignificant in any of the three time periods. The over-all correlation of the model was very significant as indicated by an F-ratio of 21.289. The R^2 Bar for the model was .6372. There was positive autocorrelation in the model. This was a case where there were structural changes which had reduced the potency of the explanatory variable over what it enjoyed in the corresponding ordinary least squares model.

The third model in this second group of models used the series dependent variable based on annual data and the individual five basic political violence indicators as the explanatory variables.¹⁰⁹ The intercepts in this model were positive but they were significant in only the "pre-insurgency" and "limited war" periods. Also, there were no significant explanatory variables, at the 95 percent confidence level, in any of the three time periods. The armed attacks variable was significant at the 90 percent confidence level. The over-all correlation in the model was very significant at an F-ratio of 13.849. The R^2 Bar for the model was .4073. Also, there was positive autocorrelation in the model.

¹⁰⁸See Table 25.

¹⁰⁹See Table 23.

The fourth model in this group of models used the series dependent variable on a quarterly basis and the individual five basic political violence indicators as the explanatory variables.¹¹⁰ All three intercepts in this model were positive and very significant. The explanatory variable, which was significant at the 95 percent confidence level, was armed attacks in the "limited war" period. The riots variable was significant at the 90 percent confidence level during the "limited war" period. The over-all correlation in the model was highly significant as indicated by an F-ratio of 42.565. The R^2 Bar for the model was .7492. This model improved considerably in its strength of significance over the annual data model. However, there was also positive autocorrelation in this model.

The last two models in this second group reflected both structural changes, which resulted in variable shifting, and shift parameters, which were reflected in the institutionalization of the data during the political violence time periods. The shifting between models of the significant individual five basic political violence indicators was partially because of the shift parameters caused by separating the data into the three political violence time periods.

Three lag structures were developed for this infrastructure variable. The first two structures were based on annual data. The third structure was based on quarterly data. The per capita electric energy consumption was used as

¹¹⁰ See Table 25.

the dependent variable in all three structures. In the first structure the independent variable was the annual cumulative political violence events index.¹¹¹ The "best fit" for this structure was a fourth degree polynomial with a five year lagged period. There was some lag effect during the first year, no effect in the second through the fourth year and a significant effect during the fifth year. The next structure used the same dependent variable and armed attacks was the independent variable.¹¹² Also, the previous lag structures provided the "best fit." In this structure, there was no effect until the fifth year in which the effect was significant. The impact of political violence was reflected in per capita electric energy consumption in the first and fifth year.

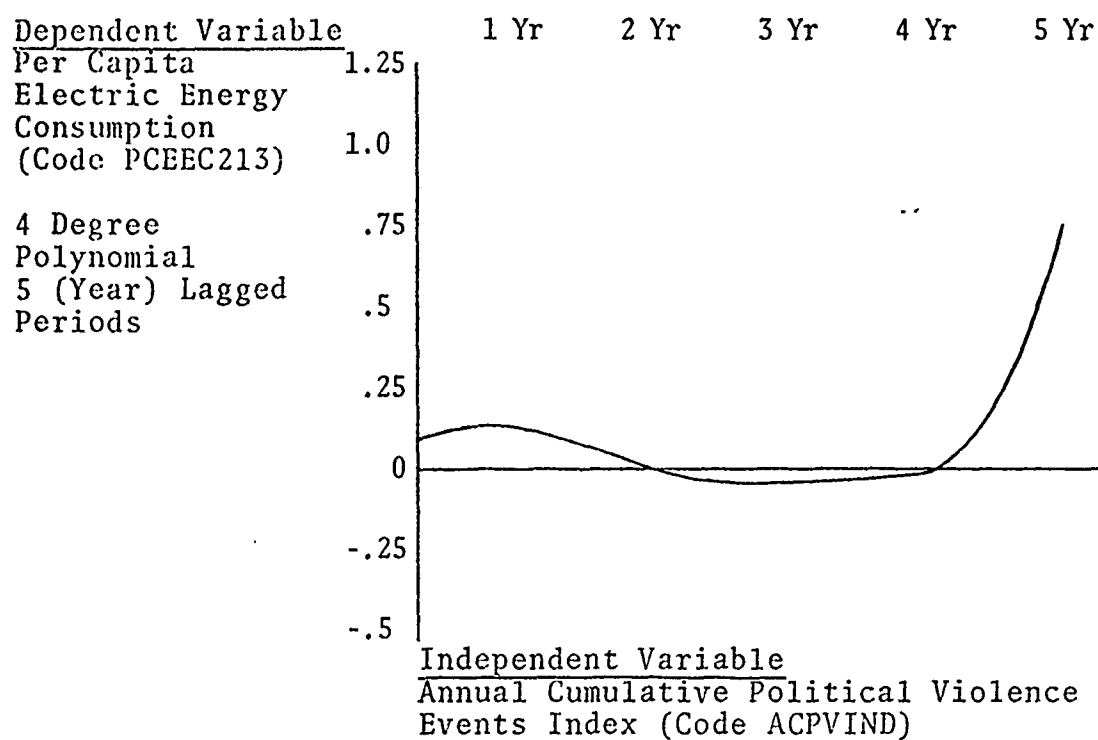
The final lag structure used quarterly per capita electric energy consumption as the dependent variable and armed attacks which was the most potent explanatory variable from the ordinary least squares multiple regression model as the independent variable.¹¹³ The "best fit" lag structure was a third degree polynomial with a twenty quarter lagged period. There was a significant and increasing lag effect during the first five quarters, then the effect declined to a level effect which was significant until the fifteenth quarter, at which time the lag effect declined to a significant

¹¹¹See Figure 22(a).

¹¹²See Figure 22(b).

¹¹³See Figure 23.

(a)



(b)

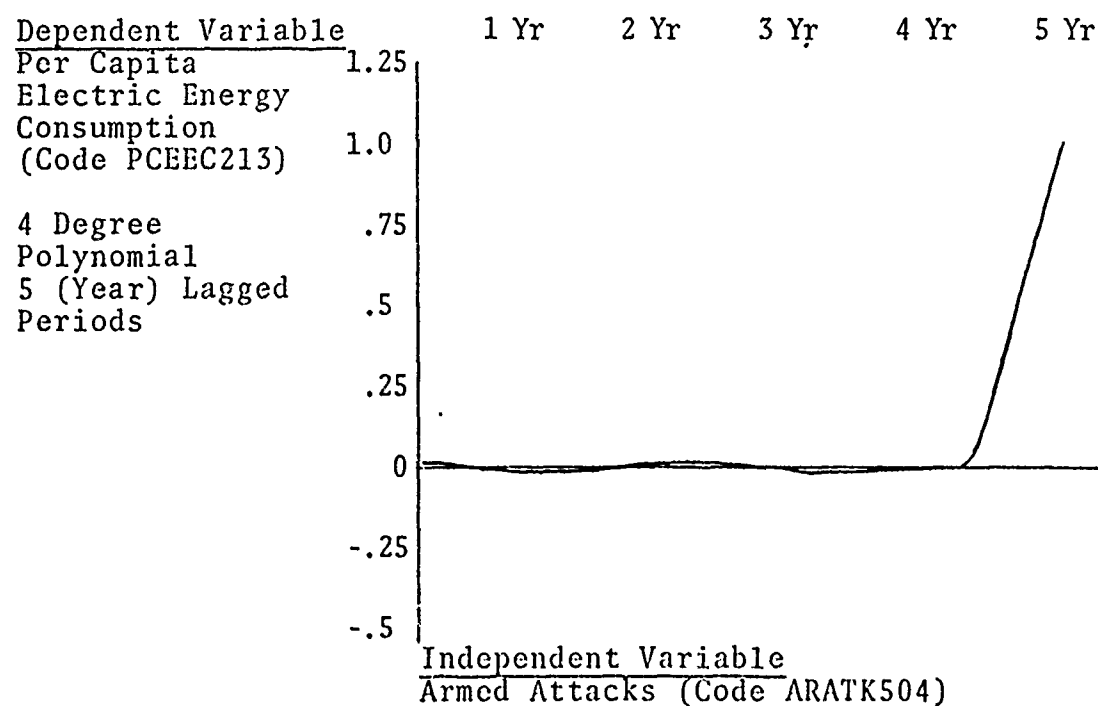


Fig. 22. Lag structures of per capita electric energy consumption.

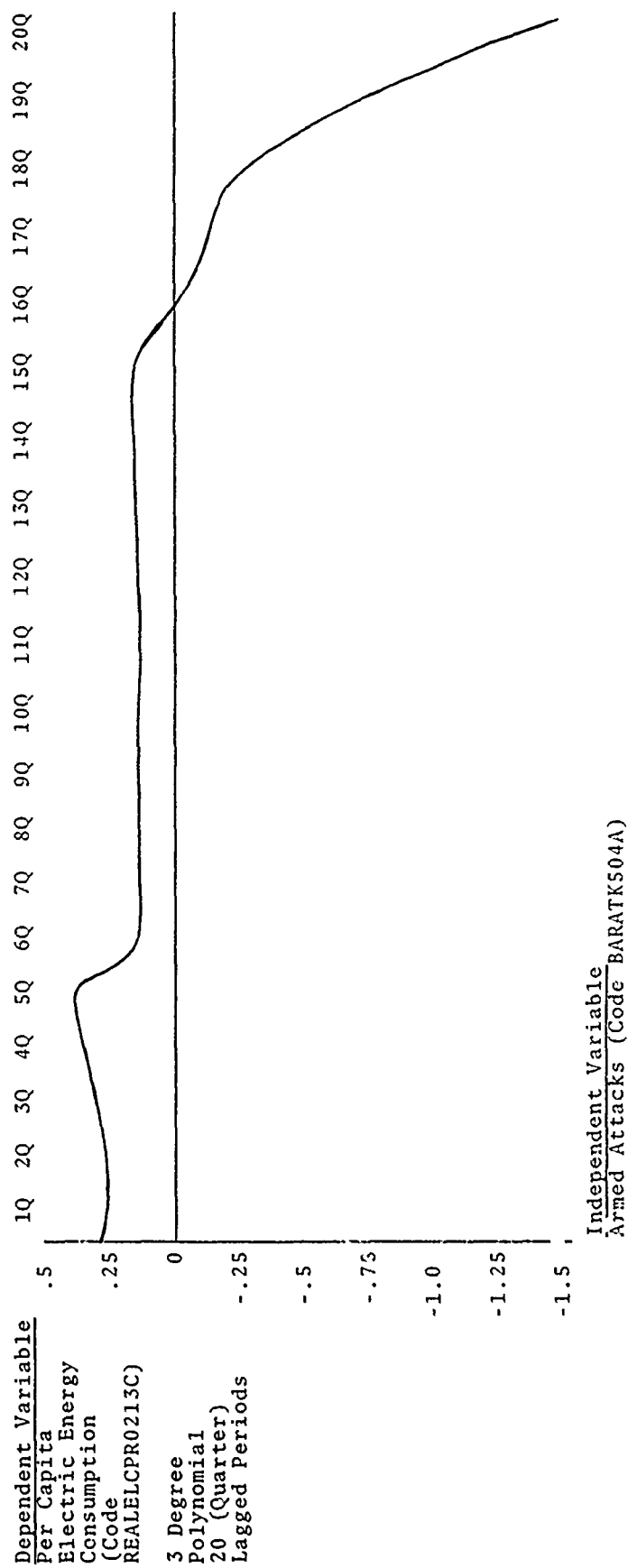


Fig. 23. Lag structure of quarterly per capita electric energy consumption.

level from the sixteenth through the twentieth quarter. This more precise picture of the lag effect of political violence on per capita electric energy consumption indicated that the effect was reflected in the first through the fifteenth quarter.

Industrial Production

The last variable used in the examination of this minor research question is the general index of industrial production, which was a checking variable designed to measure the impact of political violence on the entire secondary economic sector. This economic sector by definition included some of the infrastructure and marketing support activities, such as utilities and transportation. Data for this variable was available only for the years 1962 through 1972. Two models were structured and computed, utilizing the general index of industrial production as the dependent variable and the annual cumulative political violence events index and the individual five basic political violence indicators alternately as the explanatory variable. In the first model, which used the annual cumulative political violence events index, the intercept was positive and very significant. However, the explanatory variable was significant at only the 85 percent confidence level. Also, the over-all correlation in the model was not significant and there was positive autocorrelation in the model. The second model, which used the same dependent variable and the individual five basic political violence indicators, had a positive intercept which was

very significant. The significant variable in this model at the 95 percent confidence level was armed attacks. The riots variable was significant at the 90 percent confidence level. Also, the over-all correlation in this model was insignificant and autocorrelation conditions were in the indeterminate range. The significance of the association between the general production index and political violence indicators was weaker than the significance of the association between many of the other infrastructure variables and the indicators of political violence.

Summary

The impact of political violence on infrastructure systems supporting marketing operations and middlemen in South Vietnam was not uniform among the dependent variables. The impact of political violence as viewed by this study appeared to aid in the development of some infrastructure systems and impeded others. Also, the impact of political violence on the infrastructure systems was not uniform throughout the three political violence time periods. The impact of political violence as measured by the cumulative political violence events indices was not equal on the infrastructure systems. Also, the impact of political violence as measured by the individual five basic political violence indicators was not the same for each infrastructure system. There was considerable deviation between the impact of political violence measured by the various indicators on

the different variables which represented a homogeneous group of infrastructure systems.

The impact of political violence on the number of marketing firms and their volume of business transactions was no less turbulent than that experienced by the infrastructure system.

In the group of indicators representing transportation systems, there was a very significant level of association between the number of motor vehicles in use, railway passenger/kilometers and the indicators of political violence. However, the significance of the association between domestic air passenger/kilometers, coastwise shipping in commercial ports and indicators of political violence was generally marginal. The individual five political violence indicators were stronger predictor variables than the cumulative political violence events indices. There was no pattern among the individual political violence explanatory variables with respect to the transportation systems variables which they endeavored to explain. The separation of the data through the use of slope and intercept dummy variables indicated that the strength of the impact of political violence on the different transportation systems was mixed by system and by time period. On balance, the greatest impact of political violence on transportation systems was in the "pre-insurgency" and "insurgency" periods. Lastly, the lagged effect of political violence appeared to generally be reflected in all transportation media in the fifth year except coastwise

shipping in commercial ports which was realized in the first and fifth years.

The group of communications media exhibited significant association between all of the media and the indicators of political violence. Also, in these models the independent political violence explanatory variables were not consistent among the models. The use of slope and intercept dummy variables in the multiple regression models indicated that the greatest impact of political violence on the development of communications media was reflected in the "pre-insurgency" and "limited war" periods. The lagged impact of political violence on domestic air post letters received and mailed was reflected in the fifth year. Lag structures were not computed for the other communication variables due to the short span of the data.

The significance of the association between the number of checks presented for clearance and the indicators of political violence was good in the annual model and improved in the quarterly model. The greatest impact of political violence was indicated on this variable in the "pre-insurgency" and "limited war" periods. The individual political violence variables were stronger explanatory variables than the annual or quarterly cumulative political violence events indices. The lag structure indicated that the impact of political violence was reflected in the number of checks presented for clearance after five years in the annual models

and was reflected in the quarterly data model over the first fifteen quarters.

The volume of business conducted by commercial firms in South Vietnam was separated into categories of small, medium and public works contractor firms. Also, the number of commercial establishments was reported. The significance of the association between the volume of business conducted by all three categories of firms and political violence was strong. However, the significance between the association of the number of commercial establishments and political violence was weak. There were wide variations in the political violence explanatory variable for each of the volume of business categories and the number of commercial establishments. The use of dummy variables to separate the political violence time periods showed that the significant impacts of political violence on the volume of business were in the "insurgency" and "limited war" periods. The strength of the association of a particular time period for the number of commercial establishments was not confirmed. Based on the lag structures developed, the impact of political violence on small and medium businesses was reflected in these organizations after five years. In the case of public works contractor firms, the impact of political violence was reflected in seven years. In the case of the number of commercial establishments the lag effect of political violence was realized in five years.

There was a very significant association between the per capita electric energy consumption and the indicators of political violence. The use of quarterly data, both for per capita electric energy consumption and political violence indicators, considerably improved the significance of this association over that found when only annual data was used. The significant individual indicators of political violence shifted between the annual data and quarterly data models. However, there were stronger explanatory variables in each respective model than the cumulative political violence events indices. The separation of the data into time periods resulted in the most significant relations being reflected in the "pre-insurgency" and "limited war" periods. The lag structures indicated that the impact of political violence was reflected in the annual per capita electric energy consumption in the first and fifth years. In the quarterly data lag structures, the lag effect was in the first through the fifteenth quarters.

The significance of the association between the general industrial production index and the annual cumulative political violence events index was weak. The strength of the association improved when individual indicators of political violence were used in the model. The significant variable in this case was armed attacks. On balance, the significance of the association between the general industrial production index and the indicators of political violence was weaker than most of the other infrastructure variables.

The Impact of Political Violence on Key
Agricultural Commodity Production

Many economic, marketing and political writers on South Vietnam have taken the position that political violence had a devastating impact on the production of key agricultural commodities and their marketing. These writers have largely based their opinions on casual self observations or the reports of others. No empirical evidence has previously been offered which would support the position that these two phenomena, agriculture commodity production and political violence, are linked. Likewise, neither has any evidence been illustrated which would refute this proposition. Because of the dualistic nature of the economy of South Vietnam, and because of the important role which key agricultural commodities play during periods of political violence, it was essential that the following minor research question be analyzed in this study:

What was the impact of political violence on the production of key agricultural commodities in South Vietnam from 1955 through 1972?

This analysis was aided by a series of multiple regression models and lag structures which measured the significance of the association between key agricultural commodity production and the impact of political violence.

The first series of multiple regression models employed annual paddy (rice) production, annual rubber production, annual tea production and annual coffee production alternately as the dependent variable. Alternately the annual cumulative political violence events index and the individual five basic

political violence indicators were the explanatory variable in each regression model.¹¹⁴

The first model in this series employed annual paddy production as the dependent variable and the annual cumulative political violence events index as the independent variable. The intercept was positive and highly significant. The explanatory variable was only significant at the 85 percent confidence level. The over-all correlation in the model was insignificant. An R^2 Bar of .0765 for the model was a relatively low indication of correlation. There was autocorrelation in the model.

The second model used annual paddy production as the dependent variable and the individual five basic political violence indicators as explanatory variables.¹¹⁵ The intercept in this model was positive and highly significant. Three of the five political violence indicators used in the model had significant T-ratios at the 95 percent confidence level. They are deaths from political violence, armed attacks and protest demonstrations. The correlation in the over-all model improved as illustrated by a significant F-ratio of 4.391. The R^2 Bar of .4161 for the model indicated that the three political violence indicators in the model explained almost 42 percent of the deviation in annual paddy production. The test for autocorrelation in this model was in the inconclusive range and could not be determined.

¹¹⁴See Table 26.

¹¹⁵Ibid.

TABLE 26

THE IMPACT OF POLITICAL VIOLENCE ON ANNUAL PRODUCTION

Dependent Variable	Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code 501) ^d	Deaths From Political Violence (Code 502)	Armed Attacks (Code 504)	Protest Demonstrations (Code 506)	Government Sanctions (Code 507)
Annual Paddy (Rice) Production (000 Metric Tons)		4,576 ^a (20.37) ^b	- ^c	-	-	-	-
(Code ANNPA301)		4,358 (24.29)	-	-.02329 (2.23)	.1854 (3.26)	24.03 (2.46)	-
Annual Rubber Production (000 Metric Tons)		66.18 (19.77)	-	-	-	-	-
(Code ANNRU302)		65.17 (20.11)	-	-	-.002476 (4.28)	-	-.03 (.40)
Annual Tea Production (000 Metric Tons)		4.461 (23.34)	-	-	-	-	-
(Code ANNTE303)		4.172 (26.14)	.04126 (2.94)	-	.00004931 (1.75)	-	-
Annual Coffee Production (000 Metric Tons)		3.172 (25.65)	-	-	-	-	-
(Code ANNCO304)		2.986 (28.59)	.02081 (2.27)	-	.00004371 (2.37)	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing the IBM-360 computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model.

^dVariables have been coded for ease in computer application.

TABLE 26

ON ANNUAL PRODUCTION OF KEY AGRICULTURAL COMMODITIES

Protest Stratons (Code 506)	Government Sanctions (Code 519)	Cumulative Political Violence Events Index (Code ACPVIND)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
-	-	.006987 (1.15)	.0765	.0765	1.326	1.746	4.490	.624	.699
24.03 (2.46)	-	-	.4848	.4161	4.391	1.761	3.340	.332	1.501
-	-	-.0003697 (4.09)	.5111	.5111	16.727	1.746	4.490	.590	.813
-	-.03623 (.40)	-	.5703	.5434	9.952	1.753	3.680	.619	.769
-	-	.000007156 (1.39)	.1073	.1073	1.922	1.746	4.490	.402	1.292
-	-	-	.4161	.3797	5.346	1.753	3.680	.057	2.708
-	-	.000004225 (1.27)	.0909	.0909	1.601	1.746	4.490	.316	1.466
-	-	-	.3922	.3542	4.840	1.753	3.680	-.058	2.557

Processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an

included in the model are indicated by - .

2

The significance of the association between annual rubber production and the annual cumulative political violence events index was strong.¹¹⁶ The regression coefficient was positive and both the intercept and the cumulative political violence events index had highly and very significant T-ratios respectively. The over-all model was also highly significant as reflected in an F-ratio of 16.727. The R^2 Bar for the model indicated that the independent variable explained 51.11 percent of the deviation in the dependent variable. The test for autocorrelation was near the limit of the inconclusive range.

The next iteration of the model, which included separate political violence indicators, improved the level of significance at the intercept and reflected a positive regression coefficient.¹¹⁷ The only significant T-ratio for the independent variables in the model was for armed attacks which were very significant at a T-ratio of 4.28. The correlation in the over-all model was high as indicated by an F-ratio of 9.952 which was very significant. The R^2 Bar of the model was .5434, indicating that the two independent variables, armed attacks and government sanctions, had explained 54.34 percent of the deviation in annual rubber production. There was a slight negative regression coefficient on armed attacks indicating a downward slope of this

¹¹⁶ See Table 26.

¹¹⁷ Ibid.

function in the model. There was autocorrelation in this model.

There was a weak significance in the association between annual tea production and the annual cumulative political violence events index.¹¹⁸ However, the intercept reflected a highly significant T-ratio of 23.34, and the regression coefficient was positive. The over-all model was insignificant as reflected in an F-ratio of 1.922, and the low R^2 Bar of only .1073 indicated weak correlation between the variables. Also, the test for autocorrelation was in the inconclusive range. When riots and armed attacks were included in the model as independent variables, the significance in the association between annual tea production and these explanatory variables considerably improved.¹¹⁹ The regression coefficient was positive and the T-ratio on the intercept was highly significant at 23.34. Both explanatory variables were significant. The over-all models correlation was significant as indicated by an F-ratio of 5.346. The R^2 Bar of the model was .3797, indicating that 37.97 percent of the variance in the dependent variable was explained by the independent variables in the model.

The significance of the association between annual coffee production and the annual cumulative political violence events index was relatively weak as reflected in a

¹¹⁸See Table 26.

¹¹⁹Ibid.

T-ratio of 1.27 which was insignificant.¹²⁰ However, the intercept in the model was positive and very significant. Also, the over-all model was insignificant as reflected in an F-ratio of only 1.601. Only 9.0 percent of the deviation in the dependent variable was explained by the independent variable as reflected in the R^2 Bar. The significance of the association improved considerably when riots and armed attacks became the significant independent variables in the next iteration of the model.¹²¹ This also resulted in a significant F-ratio of 4.840 for the model. The R^2 Bar of the model was .3542, indicating that the independent variables had explained 35.42 percent of the deviation in the dependent variable.

Quarterly rubber production data was available for analysis in the study. Two models were constructed using quarterly rubber production as the dependent variable and alternately the quarterly cumulative political violence events index and the individual five basic political violence indicators as the explanatory variables.¹²² The first model, which used the quarterly cumulative political violence events index as the explanatory variable, reflected a positive intercept and a very significant T-ratio for the intercept. The quarterly political violence events index was significant. The over-all correlation in this model was highly

¹²⁰See Table 26.

¹²¹Ibid.

¹²²See Table 24.

significant as in the annual data model. The R^2 Bar for this model fell to .2359.

In the quarterly data model, which used the same dependent variable and the individual political violence indicators as the explanatory variables, the intercept was very significant at a T-ratio of 21.19. Armed attacks was the significant individual political violence indicator in this model. The over-all correlation in the model was very significant.

The significance of the impact of political violence on rubber production in the quarterly model improved markedly over the annual data model. The over-all correlation of the quarterly data model improved and the presence of autocorrelation advanced from the inconclusive range to no indication of presence.

The models containing the intercept and slope dummy variables, which were designed to test for institutional effects and structural changes, produced very satisfactory results.¹²³ For example, in the paddy production models, the significant intercepts were different for the three political violence time periods. They were highly significant during the "pre-insurgency" and "insurgency" periods and less significant during the "limited war" period, which indicated that this characteristic had become institutionalized in the first two time periods. An extremely important finding in this analysis was that the composition of the different

¹²³See Table 27.

TABLE 27
THE IMPACT OF POLITICAL VIOLENCE ON ANNUAL PRODUCTION OF KEY AGRICULTURAL CROPS

Dependent Variable	Independent Variable(s)	Institutional Effects (Shift Parameters) ^c			Structural Changes (Slope Changes) ^f											
		Intercept (Regression Coefficient)(T-Ratio)			Riots (Code 501)			Deaths From Political Violence (Code 502)			Armed Attacks (Code 504)			Protest Demonstrations		
		DDUMY0 ^d 1955-60	DDUMY1 1961-64	DDUMY2 1965-72	RDUMY0 1955-60	RDUMY1 1961-64	RDUMY2 1965-72	EDUMY0 1955-60	EDUMY1 1961-64	EDUMY2 1965-72	ADUMY0 1955-60	ADUMY1 1961-64	ADUMY2 1965-72	PDUMY0 1955-60	PDUMY1 1961-64	PDUMY2 1965-72
Annual Paddy (Rice) Production (000 Metric Tons) (Code ANNDA301)		5,942 ^a (11.35) ^b	5,978 (2.13)	5,214 (17.34)	- ^c	-	-	-	-	-	-	-	-	-	-	-
Annual Rubber Production (000 Metric Tons) (Code ANNRA302)		4,177 (13.52)	5,081 (14.70)	3,930 (6.51)	-.02350 (1.86)	-	56.51 (1.98)	-	-	-	-	-	.09780 (2.31)	-	-	-
Annual Tea Production (000 Metric Tons) (Code ANNTA303)		66.70 (14.82)	76.60 (13.90)	46.28 (6.76)	-	-	-	-	-	-	-	-	-	-	-	-
Annual Coffee Production (000 Metric Tons) (Code ANNCA304)		79.22 (15.11)	76.60 (24.85)	37.80 (8.07)	-	-	-	-	-	-	-	-	-.001251 (4.01)	-	-	-
		3,817 (15.11)	4,850 (15.66)	5,444 (14.18)	-	-	-	-	-	-	-	-	-	-	-	-
		4,060 (19.19)	4,850 (20.50)	4,817 (18.58)	-.2433 (2.82)	-	.03151 (1.88)	-	-	-	-	-	-	-	-	-
		3,089 (11.33)	3,375 (16.71)	3,612 (25.29)	-	-	-	-	-	-	-	-	-	-	-	-
		2,783 (17.70)	3,375 (17.53)	2,963 (8.80)	-	-	.03337 (1.99)	-	-	-	-	-	.00004121 (1.75)	-	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Lessco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

^eIntercept dummy variables have been generated to detect shift parameters between the three time periods of the study.

^fSlope dummy variables have been generated to detect slope changes between the three time periods of the study.

TABLE 27

EFFECTS ON ANNUAL PRODUCTION OF KEY AGRICULTURAL COMMODITIES

Structural Changes (Slope Changes) ^f										R ²	R ² Adj	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
acks (Code 504)	Protest Demonstrations (Code 506)				Government Sanctions (Code 519)				Cumulative Political Violence Events Index (Code CPVIND)							
ADUMY1 ADUMY2 1961-64 1965-72	PDUMY0 PDUMY1 PDUMY2 1955-60 1961-64 1965-72				GDUMY0 GDUMY1 GDUMY2 1955-60 1961-64 1965-72				20DUMY0 21DUMY1 22DUMY2 1955-60 1961-64 1965-72							
-	-	-	-	-	-	-	-	-	.1970 (.61)	.4029	.2750	2.163	1.771	3.180	.659	.678
-.09780 (2.51)	-	-	-	-	-	-	-	-	-	.6663	.5273	3.661	1.796	3.090	.156	1.684
-	-	-	-	-	-	-	-	-	-.0001367 (1.36)	.7603	.7095	10.334	1.771	3.180	.507	.986
-.001251 (4.01)	-	-	-	-	-1.789 (2.72)	-	-.1529 (2.79)	-	-	.9367	.9102	27.107	1.796	3.090	-.128	2.248
-	-	-	-	-	-	-	-	-	-.000004814 (.85)	.5779	.4875	4.450	1.771	3.180	.074	2.201
-	-	-	-	-	-	-	-	-	-	.7720	.7018	8.126	1.782	3.110	-.044	2.055
-	-	-	-	-	-	-	-	-	-.0003713 (1.41)	.5621	.4683	4.173	1.771	3.180	.197	1.654
-.00004121 (1.75)	-	-	-	-	-	-	-	-	-	.6326	.5196	4.133	1.782	3.110	-.173	2.663

STAT software computer package in an IBM-360 computer system.

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independent political violence variables changed. Instead of deaths from political violence, armed attacks and protest demonstrations, the significant variables in the regression models utilizing dummy variables were riots in the "pre-insurgency" and "limited war" periods and armed attacks during the "limited war" period. These new variables became the major contributing variables to the explanation of deviations in paddy production during these time periods. When data separation techniques were used, the strongest and most potent explanatory variables remained in the regression and the weak independent variables were excluded from the model, based on their insignificance.

In the case of annual rubber production, composition of the independent variables remained the same but the level of significance increased considerably and was evident only in some time periods.¹²⁴ Armed attacks were significant only during the "limited war" period and government sanctions were significant during the "pre-insurgency" and "limited war" periods. Institutional effects were highly significant during the "pre-insurgency" and "insurgency" periods and less significant during the "limited war" period. The over-all model correlation was highly significant as indicated by the high F-ratios. The presence of autocorrelation was in the inconclusive range for the model containing the annual cumulative political violence events index.

¹²⁴ See Table 27.

Annual tea production was the dependent variable in a set of models which employed dummy intercept and independent variables of political violence.¹²⁵ In these models the composition of the significant explanatory variables changed from riots and armed attacks, which were significant in the ordinary least squares models, to only riots which were significant during the "pre-insurgency" and "limited war" periods. The intercepts of these models were positive and demonstrated equal strength in each political violence time period. The over-all correlation of the models was an improvement over that found in the OLS regression models.

The employment of dummy variables improved the significance of the impact of political violence on annual coffee production.¹²⁶ The institutional effects of the intercept were very significant during the "pre-insurgency" and "insurgency" time periods and less significant during the "limited war" period. The composition of the explanatory variables in the model did not change with the use of dummy variables, but the time periods which were significant were "limited war" for riots and armed attacks.

The utilization of dummy variables to separate the political violence time periods illustrated that significant shift parameters have occurred in dependent agricultural commodities production. Of equal or greater importance, the use of dummy variables also indicated that the significance

¹²⁵ See Table 27.

¹²⁶ Ibid.

of independent indicators of political violence were different during these time periods from those which had exhibited significance during the entire development period.

The quarterly data analysis, utilizing dummy variables for quarterly rubber production, indicated highly significant institutional effects during the "pre-insurgency" and "insurgency" periods and less significant effects during the "limited war" period.¹²⁷ The quarterly cumulative political violence events index was significant during all three time periods indicating structural effects. The over-all model correlation improved over the corresponding annual data model. The quarterly model using dummy variables contained armed attacks during the "limited war" period as a significant variable. This variable was significant in the corresponding annual dummy variable model.

A series of Almon lag structures were created in order to test the effects of political violence on key agricultural commodity production. Key agricultural commodity indicators were used in the series as the dependent variables and alternately the cumulative violence indices and the individual five basic political violence indicators were used as the independent variable.

The first lag structure in the series used annual paddy production as the dependent variable and the annual cumulative political violence events index as the independent

¹²⁷See Table 25.

variable.¹²⁸ The "best fit" structure was a fourth degree polynomial with a five year lagged period. There was a mild lag effect in the first year, no effect in the second year, a mild negative effect in the third year, no effect in the fourth year and a significant effect in the fifth year. The next iteration of the structure used the same dependent variable and used armed attacks as the independent variable.¹²⁹ The previous lag structure produced the "best fit." The lag effect was insignificant in the first four years of this structure, and the full significant impact was in the fifth year. The impact of political violence on annual paddy production was realized in the fifth year.

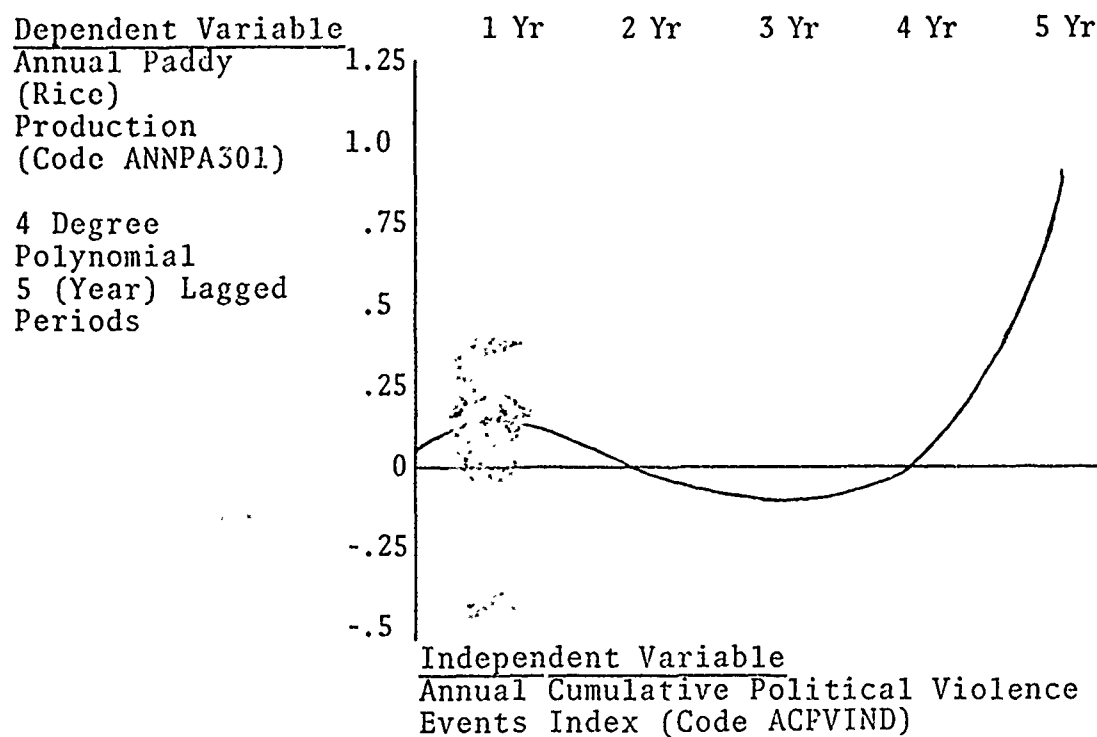
The next lag structure in the series used annual rubber production as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent variable.¹³⁰ The "best fit" for both structures was a fourth degree polynomial with a five year lagged period. The first structure, which used the annual cumulative political violence events index as the independent variable, had a mild lag effect in the first year, no effect in the second year, a mild negative effect in the third and fourth years and a very significant effect in the fifth year. In the structure which used armed attacks as the independent variable, there was an insignificant effect

¹²⁸See Figure 24 (a).

¹²⁹See Figure 24 (b).

¹³⁰See Figure 25 (a) and 25 (b).

(a)



(b)

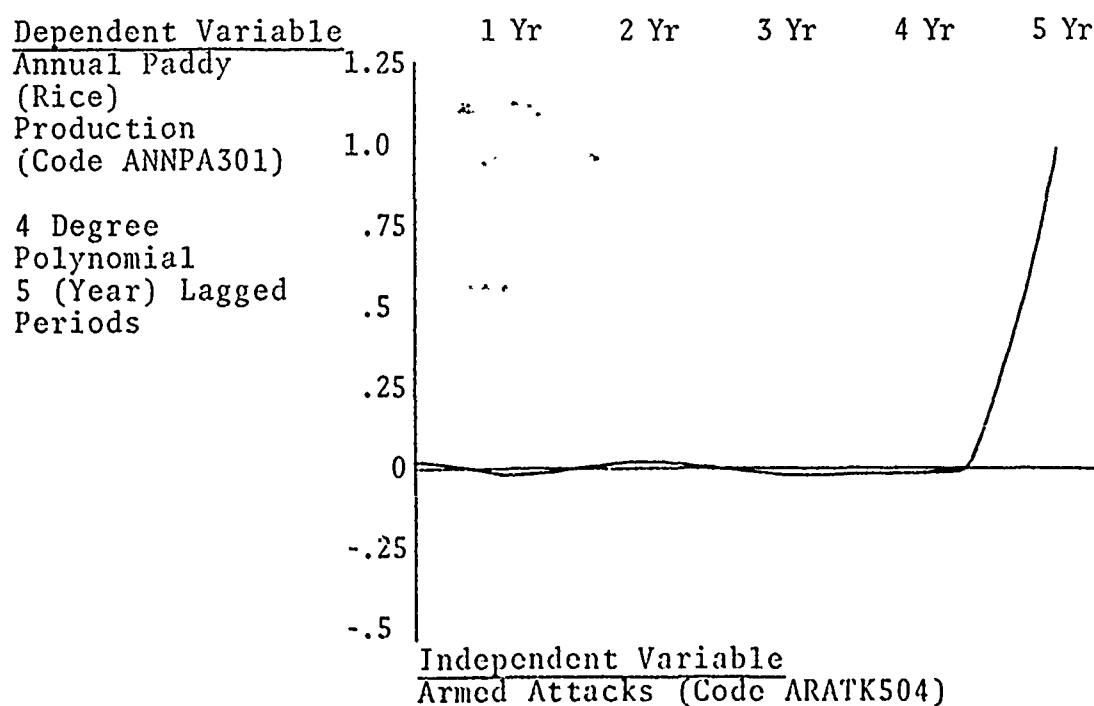
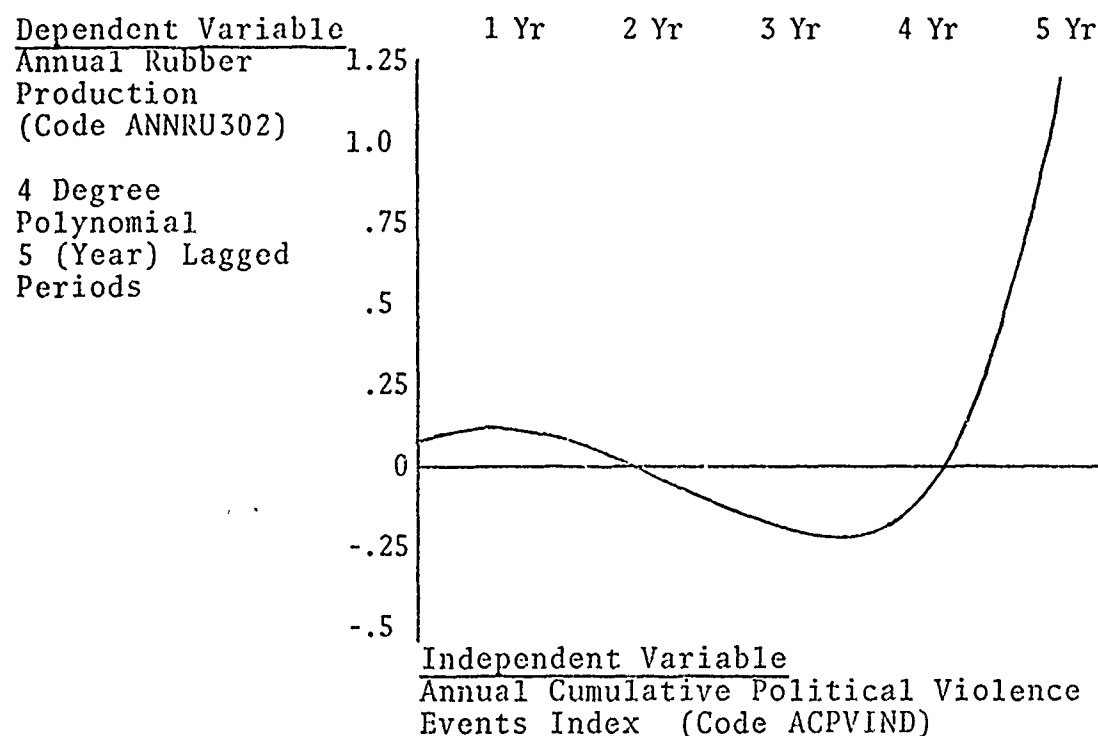


Fig. 24. Lag structures of annual paddy (rice) production.

(a)



(b)

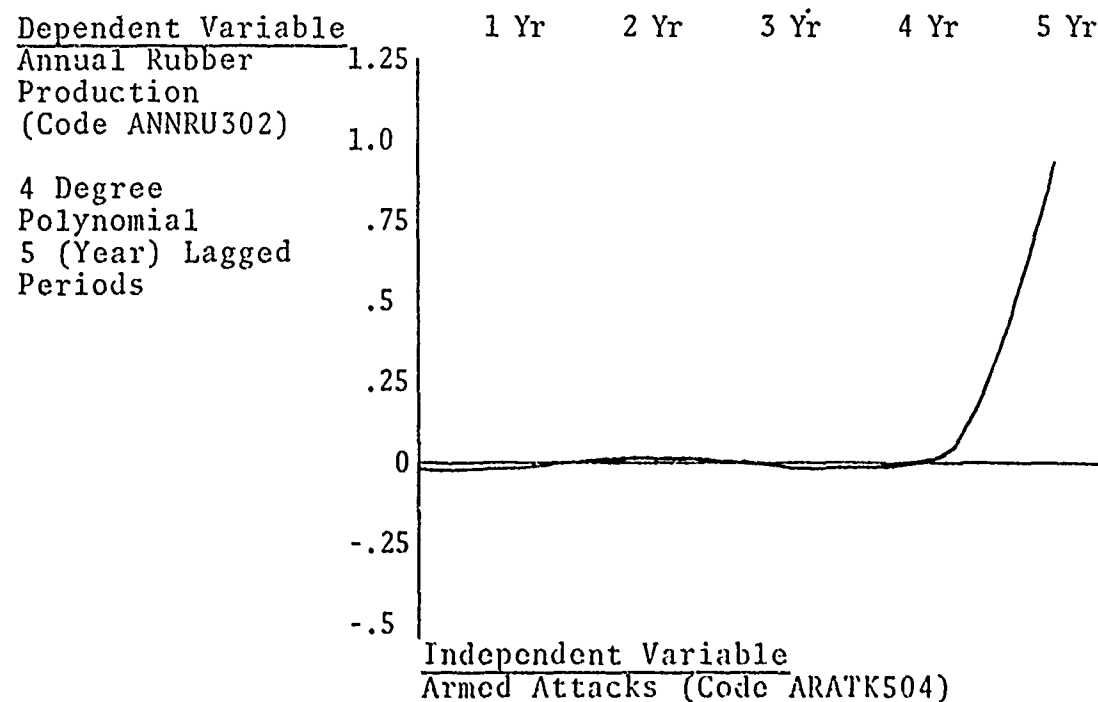


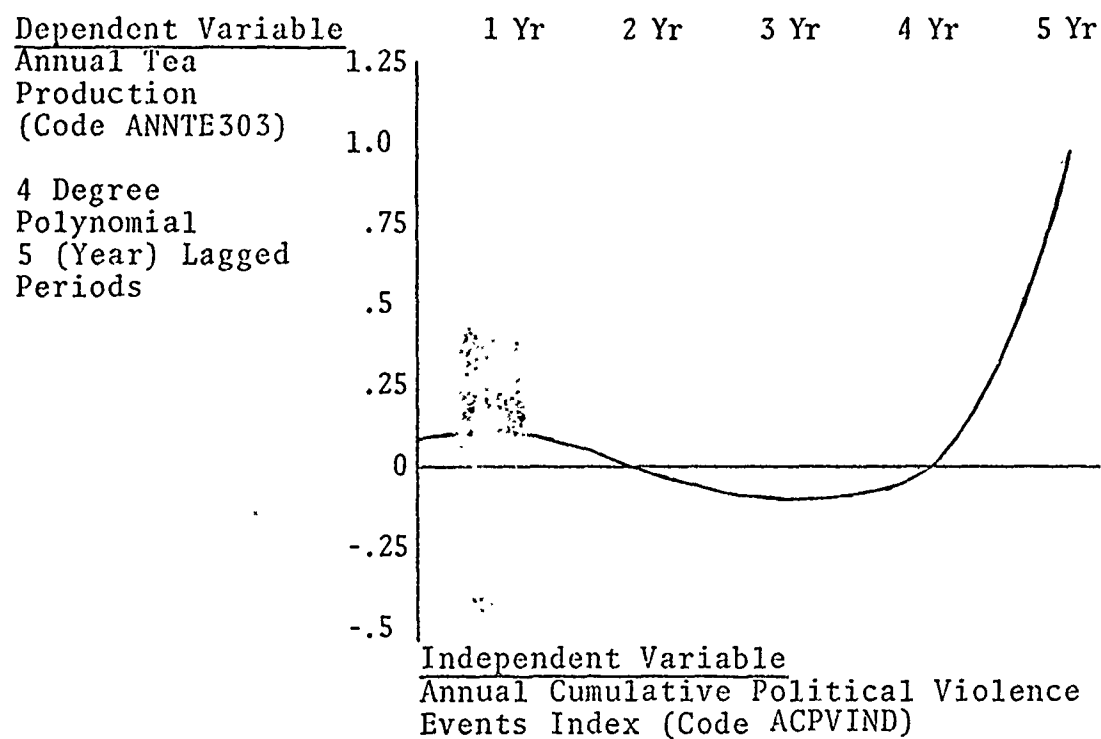
Fig. 25. Lag structures of annual rubber production.

in the first four years and a very significant effect in the fifth year. The significant effect of political violence on annual rubber production was largely reflected in the fifth year.

The next lag structure in this series used annual tea production as the dependent variable and alternately the annual cumulative political violence events index and riots as the independent variable.¹³¹ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first structure, which used the annual cumulative political violence events index as the independent variable, had a mild effect in the first year, no effect in the second year, a mild negative effect in the third year, no effect in the fourth year and a very significant effect in the fifth year. The structure which used riots as the independent variable, had a significant effect in the first year, no effect in the second and third years and a mild effect in the fourth and fifth years. The results of these structures were not identical as had been the case in previous structures in this series. The impact of the annual cumulative political violence events index behaved in a manner similar to previous findings in this series. The impact of riots on annual tea production was largely realized in the first year, and there was a mild lag effect in the fourth and fifth years.

¹³¹ See Figure 26(a) and 26(b)

(a)



(b)

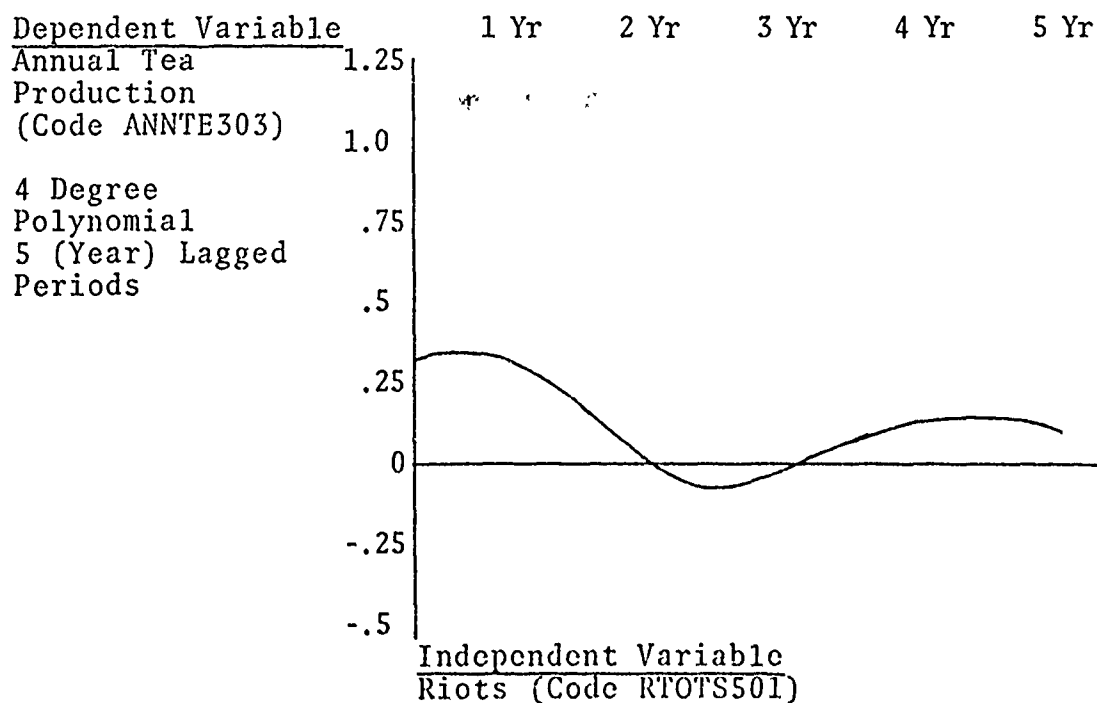


Fig. 26. Lag structures of annual tea production.

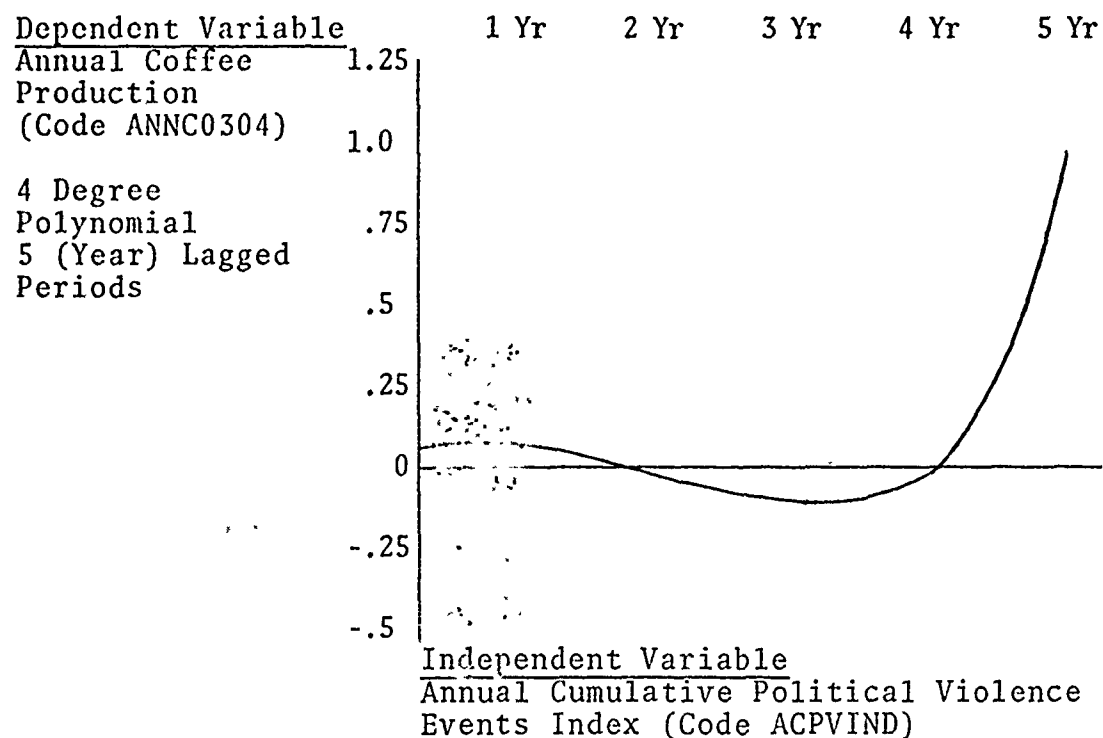
The last two structures in this series used annual coffee production as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent variable.¹³² The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first structure, which used the annual cumulative political violence events index as the independent variable, had a mild effect in the first year, no effect in the second year, a mild negative effect in the third year, no effect in the fourth year and a very significant effect in the fifth year. The second structure, which used armed attacks as the independent variable, had an insignificant effect in the first four years of the lagged structure and a very significant effect in the fifth year. The impact of political violence on annual coffee production was realized in the fifth year.

Summary

The impact of political violence on key agricultural commodity production was less severe than suggested by published literature on the subject. The significance of the association between indicators of key agricultural commodity production and the indicators of political violence was not as strong as anticipated in the minor research question. The impact of political violence on key agricultural commodity production was not the same for each commodity tested. The

¹³²See Figure 27(a) and 27(b).

(a)



(b)

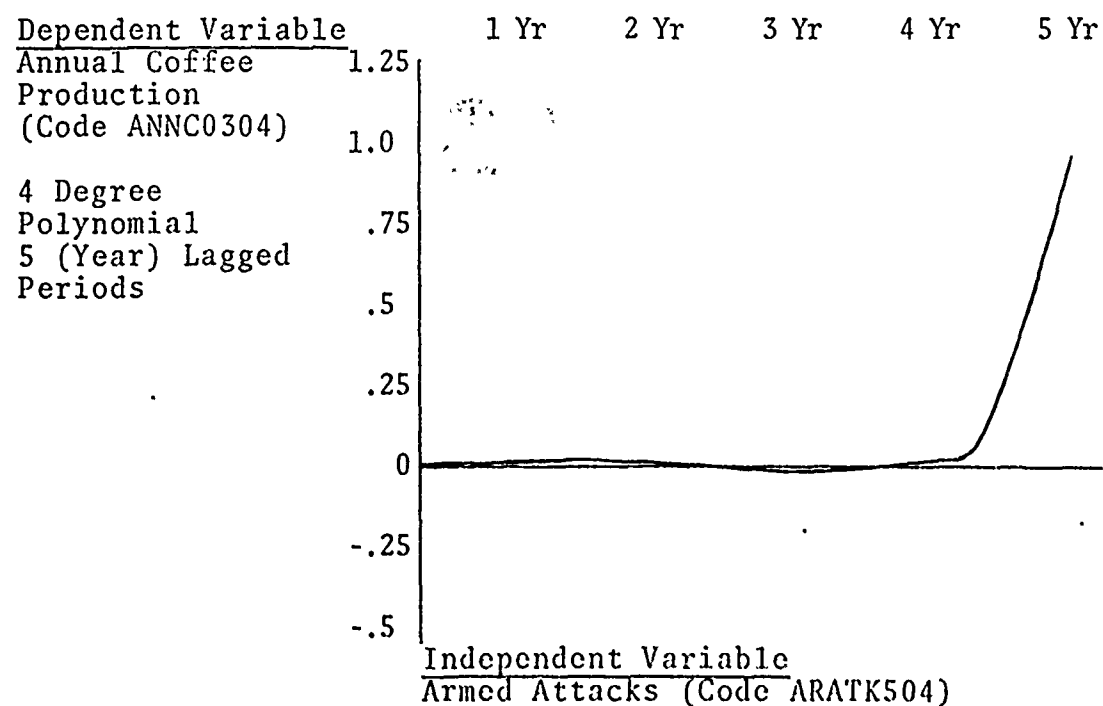


Fig. 27. Lag structures of annual coffee production.

impact of political violence was not uniform throughout the three political violence time periods of the study. The impact of the cumulative political violence events indices and the individual five basic political violence indicators on key agricultural commodity production was not the same. The impact of the individual political violence variables was not consistent on the key agricultural commodity production variables. The lag structures developed for these models exhibited different lagged periods and intensities for most of the key agricultural production variables.

In the models constructed with annual paddy production as the dependent variable, the five individual basic political violence variables were more potent explanatory variables than the annual cumulative political violence events index. Parameter shifts in the paddy production models had become institutionalized in the "pre-insurgency" and "insurgency" periods. There were significant structural changes as indicated by shifts in the explanatory variables between the ordinary least squares model and the model which used slope and intercept dummy variables. This was a sorting process whereby the strength of explanatory variables was identified in a particular political violence time period. Other variables which may be significant in the longer eighteen year development period were not significant in the individual political violence time periods. The significant impact of political violence was reflected in paddy production during the fifth year.

The significance of the association between rubber production and political violence was particularly strong. In the models which used annual rubber production, the annual cumulative political violence events index was a more potent explanatory variable than the individual five basic indicators of political violence. Rubber production was one of the three dependent variables in the study for which there were available quarterly data. The use of quarterly data improved the over-all significance of the association between quarterly rubber production and all indicators of political violence. Institutional effects were very significant during the "pre-insurgency" and "insurgency" periods in the quarterly rubber production models. There were indications of structural changes between the political violence time periods. The lag effects of political violence were slightly reflected in rubber production in the first year and very significantly reflected in the fifth year.

The significance of the association between annual tea production and the annual cumulative political violence indicator was weak and improved when the individual five basic political violence indicators were the explanatory variables in the model. The dummy variable models indicated that there were institutional effects in the "pre-insurgency" and "limited war" periods. The lag effect of political violence on annual tea production was realized in the first and fifth years.

The significance of the association between annual coffee production and the annual cumulative political violence events index was also weak. The significance of the association improved considerably when the individual five basic political violence indicators were the explanatory variables in the model. The institutional effects were most significant during the "pre-insurgency" and "insurgency" time periods. The impact of political violence was reflected in annual coffee production during the fifth year.

The Impact of Political Violence on the Patterns of Consumption

Countries which have experienced political violence responded to it by altering their normal economic behavior patterns. Due either to scarcity of goods or profit opportunities, the patterns of national consumption tended to rapidly and radically change in response to political violence. Consumption patterns were institutionalized in the economy and were slow to change unless there was unusual and volatile economic conditions such as those which occur during periods of increasing political violence. Therefore, an important objective of this study was to examine, using empirical data, the impact of political violence on the patterns of consumption in South Vietnam from 1955 through 1972.

The analysis of consumption pattern changes was divided into the following homogeneous groups: basic foods, luxury foods, industrial goods and soft goods. These groups cover

a wide range of commodities which had been selected based upon traditional consumption items in the economy of South Vietnam. The separate indicators from the groups were based on per capita consumption.

Basic Foods

Basic foods which are key elements of the Vietnamese diet are rice, fish and pork. A series of multiple regression models were constructed in which the per capita rice, per capita fish and per capita pork consumption were the independent variables.¹³³ The annual cumulative political violence events index and the individual five basic political violence indicators were alternately used as the explanatory variable in these models.

In the first group of models, the series dependent variables were used. The annual cumulative political violence events index was the explanatory variable.¹³⁴ The intercepts were positive in each model and were very significant. The explanatory variable was significant at the 95 percent confidence level in the per capita fish and pork model. The annual cumulative political violence events index was significant at the 85 percent confidence level in the per capita rice consumption model. The over-all correlation in the per capita fish and pork models was very significant. The annual cumulative political violence events index was

¹³³See Table 28.

¹³⁴Ibid.

TABLE 28

THE IMPACT OF POLITICAL VIOLENCE ON ANNUAL CONSUMPTION

Dependent Variable	Independent Variable(s)	Intercept (Regression Coefficient) (T-Ratio)	Riots (Code 501) ^d	Deaths From Political Violence (Code 502)	Armed Attacks (Code 504)	Protest Demonstrations (Code 506)	Government Sanctions (Code 519)	Cumulative Political Events (Code 520)
Per Capita Rice Consumption (Kilograms)	(Code PCRC401)	204.1 ^a (31.02) ^b	- ^c	-	-	-	-	.000214 (1.21)
		198.0 (31.34)	-	-	.001433 (1.29)	.4622 (1.59)	-	
Per Capita Fish Consumption (Kilograms)	(Code PCFCS402)	18.85 (14.67)	-	-	-	-	-	.00011 (3.40)
		15.82 (22.15)	.2625 (3.51)	-	.0008420 (6.69)	.09312 (2.38)	-	
Per Capita Pork Consumption (Kilograms)	(Code PCPCS403)	4.986 (39.31)	-	-	-	-	-	-.0000 (2.61)
		4.948 (41.87)	-	-	-.00006609 (3.19)	-	-	
Per Capita Sugar Consumption (Kilograms)	(Code PCSCS404)	10.04 (6.93)	-	-	-	-	-	.00010 (2.71)
		9.682 (8.90)	-	-	.0009933 (4.85)	.2386 (3.05)	-.1008 (2.14)	
Per Capita Beverage Consumption (Liters)	(Code PCBSC405)	8.984 (12.39)	-	-	-	-	-	.00006 (3.15)
		7.625 (13.06)	.1142 (1.87)	-	.0003906 (3.80)	.05544 (1.73)	-	
Per Capita Selected Petroleum Consumption (Liters)	(Code PCSPC406)	31.95 (9.81)	-	-	-	-	-	.00026 (3.03)
		31.19 (13.51)	-	-	.002483 (5.71)	.5149 (3.10)	-.2179 (2.18)	
Per Capita Cement Consumption (Kilograms)	(Code PCCCS407)	29.34 (8.98)	-	-	-	-	-	.0001 (1.36)
		23.27 (9.45)	.7153 (3.31)	-	.001174 (2.71)	-	-	
Per Capita Domestic Fabric Consumption (Meters)	(Code PCDFC408)	6.237 (5.13)	-	-	-	-	-	.0000 (.34)
		3.775 (4.19)	-	-.00007131 (1.95)	-	-	.1201 (3.73)	
Per Capita Pharmaceutical Consumption (VN\$)	(Code PCPPC409)	31.44 (11.85)	-	-	-	-	-	-.000 (.17)
		31.46 (11.79)	-.1485 (.63)	-	.0002805 (.60)	-	-	
Per Capita Paper Products Consumption (Kilograms)	(Code PCPAC410)	3.058 (7.75)	-	-	-	-	-	.0000 (2.09)
		3.076 (7.77)	.07107 (2.06)	-	-	-	-	

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response in an IBM-360 computer system.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Indicated variables not included in the model are indicated by a dash.

^dVariables have been coded for ease in computer application.

ANNUAL CONSUMPTION PATTERNS

Government Observations (N = 519)	Cumulative Political Violence Events Index (Code ACPVIND)	R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
-	.0002146 (1.21)	.0836	.0836	1.459	1.746	4.490	.358	1.457
-	-	.2083	.1588	1.973	1.753	3.680	.134	2.012
-	.0001180 (3.40)	.4196	.4196	11.567	1.746	4.490	.442	1.118
-	-	.8430	.8221	25.058	1.761	3.340	-.089	2.206
-	-.000008938 (2.61)	.2985	.2985	6.810	1.746	4.490	.421	1.158
-	-	.3884	.3884	10.161	1.746	4.490	.241	1.504
-	.0001059 (2.71)	.3142	.3142	7.329	1.746	4.490	.470	1.062
1008 (2.14)	-	.6613	.6161	9.111	1.761	3.340	-.093	2.220
-	.00006165 (3.15)	.3825	.3825	9.913	1.746	4.490	.498	1.004
-	-	.6498	.6031	8.660	1.761	3.340	.316	1.342
-	.0002669 (3.03)	.3651	.3651	9.203	1.746	4.490	.550	.697
2177 (2.18)	-	.7212	.6840	12.073	1.761	3.340	.036	1.934
-	.0001198 (1.36)	.1034	.1034	1.845	1.746	4.490	.505	.988
-	-	.5228	.4929	8.215	1.753	3.680	.089	1.956
-	.00001104 (.34)	.0070	.0070	.113	1.746	4.490	.701	.571
1201 (3.73)	-	.4885	.4566	7.164	1.753	3.680	.538	.912
-	-.00001222 (.17)	.0018	.0018	.029	1.746	4.490	.668	.756
-	-	.0539	-.0053	.427	1.753	3.680	.552	.909
-	.00002224 (2.09)	.2140	.2140	4.356	1.746	4.490	.369	1.265
-	-	.2093	.2093	4.236	1.746	4.490	.833	.415

izing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package

the model are indicated by -.

2

insignificant in the per capita rice consumption model. The test for autocorrelation was in the inconclusive range for all three models.

In the second group of models the series dependent variables were employed again. The independent variables were the individual five basic political violence indicators.¹³⁵ The intercepts of these models were positive and very significant to highly significant. There were no significant explanatory variables in the per capita rice consumption model. Armed attacks and protest demonstrations were significant explanatory variables at the 85 and 90 percent confidence level respectively in the rice consumption model. Riots, armed attacks and protest demonstrations were significant in the per capita fish consumption model. Armed attacks were the only significant explanatory variable in the per capita pork consumption model. The over-all correlation in the per capita fish and pork consumption models was very significant. The correlation in the per capita rice consumption model was insignificant. The R^2 Bar values for the per capita fish and pork consumption models were .8221 and .3884 respectively. Only the per capita pork consumption model had indications of autocorrelation which were in the inconclusive range.

A series of models were constructed in which slope and intercept dummy variables were used to separate the data into the three political violence time periods. The series

¹³⁵See Table 28.

dependent variables were the same as those used in the previous series. The independent variable in this series was alternately the annual cumulative political violence events index and the individual five basic political violence indicators.¹³⁶

The first group of models in this series used the series dependent variables and the annual cumulative political violence events index as the explanatory variable.¹³⁷ The intercepts were positive and significant for per capita rice and pork consumption in all three political violence time periods. The intercepts in the per capita fish consumption model were significant in only the "pre-insurgency" and "insurgency" periods. The significance of the association in the per capita rice and fish models was weaker in the "insurgency" period than in the "pre-insurgency" and "limited war" period, which was very significant. The per capita pork consumption model was very significant in all three political violence time periods. The annual cumulative political violence events index was significant in only the per capita pork consumption model during the "limited war" period. The over-all correlation of all three models was significant at the 95 percent confidence level. The test for autocorrelation for these models resulted in the per capita rice and pork models being in the inconclusive range and an indication

¹³⁶ See Table 29.

¹³⁷ Ibid.

TABLE 29
THE IMPACT OF POLITICAL VIOLENCE ON ANNUAL CONSUMPTION

Dependent Variable	Independent Variable(s)	Institutional Effects (Shift Parameters) ^c			Structural Changes (Slope Changes)											
		Intercept (Regression Coefficient)(T-Ratio)			Riots (Code 501)			Deaths From Political Violence (Code 502)			Armed Attacks (Code 504)			Protest Demonstrations		
		DUMY0 ^d 1955-60	DUMY1 1961-64	DUMY2 1965-72	RDUMY0 1955-60	RDUMY1 1961-64	RDUMY2 1965-72	DDUMY0 1955-60	DDUMY1 1961-64	DDUMY2 1965-72	ADUMY0 1955-60	ADUMY1 1961-64	ADUMY2 1965-72	PDUMY0 1955-60	PDUMY1 1961-64	PDUMY2 1965-72
Per Capita Rice Consumption (Kilograms)		183.2 ^a (20.24) ^b	160.0 (3.29)	224.6 (28.66)	- ^c	-	-	-	-	-	-	-	-	-	-	-
(Code PCRC401)		154.8 (7.63)	220.0 (23.32)	224.6 (33.68)	-39.53 (2.43)	-	-	-	-	-	4.667 (1.82)	-	-	-150.5 (1.39)	-	-
Per Capita Fish Consumption (Kilograms)		14.3 (2.74)	25.21 (3.22)	-	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCFC402)		14.3 (15.76)	19.16 (11.42)	20.65 (9.28)	-	-	.2544 (2.29)	-	-	-	-	-	.0005938 (3.81)	-	.1756 (3.05)	-
Per Capita Pork Consumption (Kilograms)		5.083 (24.69)	4.475 (17.75)	5.399 (17.25)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCPC403)		5.083 (26.48)	4.475 (19.03)	5.170 (22.85)	-	-	-	-	-	-	-	-	-.00008114 (3.47)	-	-	-
Per Capita Sugar Consumption (Kilograms)		6.433 (2.23)	-	19.37 (4.42)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PLSC404)		6.433 (6.71)	10.02 (8.54)	20.34 (9.83)	-	-	-	-	-	-	-	-	.0004814 (3.23)	-	-	-
Per Capita Beverage Consumption (Liters)		6.883 (12.71)	-	14.46 (30.84)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCBC405)		6.883 (8.75)	14.46 (21.24)	-	-	-	-	-	-	-	-	-.01671 (5.40)	-	-	-.09057 (2.25)	-
Per Capita Selected Petroleum Consumption (Liters)		25.02 (5.84)	54.07 (14.58)	-	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCSPC406)		25.02 (15.76)	29.77 (15.32)	56.11 (16.36)	-	-	-	-	-	-	-	-	.001270 (5.46)	-	-	-
Per Capita Cement Consumption (Kilograms)		18.52 (2.55)	54.1 (4.91)	-	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCCC407)		18.52 (5.55)	30.2 (7.39)	37.38 (8.54)	-	-	.5948 (2.05)	-	-	-	-	-	-	-	-	-
Per Capita Domestic Fabric Consumption (Meters)		-	-	9.470 (2.23)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCDFC408)		-	-	6.426 (1.37)	-	-	-	-	-	-.00007438 (.93)	-	-	-	-	-	-
Per Capita Pharmaceutical Consumption (Vials)		38.18 (5.26)	-	21.70 (1.97)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCPPC409)		38.18 (11.19)	27.30 (6.53)	-.002019 (6.43)	-	-	1.171 (5.84)	-	-	-	-	-	-	-	-	-
Per Capita Paper Products Consumption (Kilograms)		.5600 (19.77)	.4679 (3.07)	.5075 (20.69)	-	-	-	-	-	-	-	-	-	-	-	-
(Code PCPAC410)		.5540 (18.96)	.5273 (13.16)	.4669 (15.33)	.00600 (.50)	.002357 (1.19)	.003555 (1.54)	-	-	-	-	-	-	-	-	-

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360.

^aThe regression coefficient is reported for each variable in the regression model.

^bThe T-Ratio is reported for each variable in the regression model.

^cThe results of the "best fit" regression model is reported. Independent variables not included in the model are indicated by -.

^dVariables have been coded for ease in computer application.

^eIntercept dummy variables have been generated to detect shift parameters between the three time periods of the study.

^fSlope dummy variables have been generated to detect slope changes between the three time periods of the study.

TABLE 2

POLITICAL VIOLENCE ON ANNUAL CONSUMPTION PATTERNS

Structural Changes (Slope Changes)				R ²	R ² Bar	F-Ratio	T-Ratio 95% Confidence	F-Ratio 95% Confidence	RHO	Durbin- Watson
Model	Protest Demonstrations (Code 559)	Government Sanctions (Code 519)	Cumulative Political Violence Events Index (Code 611ND)							
1955-72	1955-60 1961-64 1965-72	1955-60 1961-64 1965-72	1955-60 1961-64 1965-72							
-	-	-	-	.5306	.4301	5.674	1.771	5.180	.169	1.872
-	-.1525 (1.59)	-	-	.2123	.5924	4.539	1.796	3.090	-.158	2.316
-	-	-	-.00003976 (.35)	-	-	5.312	1.761	3.340	.698	.609
-.0005938 (3.81)	-.1756 (5.65)	-	-	.9129	.8766	19.221	1.796	3.090	-.135	2.300
-	-	-	-.00001361 (2.96)	.4995	.3923	3.244	1.771	5.180	.420	1.165
-.00008114 (3.47)	-	-	-	.5647	.4714	4.216	1.771	5.180	.049	1.851
-	-	-	-.000005893 (.89)	.2085	.1030	8.120	1.761	5.340	.641	.734
-.0004814 (3.43)	-	-.1423 (5.66)	-	.9312	.9025	24.813	1.796	3.090	.068	1.858
-	-	-	-.001480 (12.83)	.8996	.8862	45.231	1.761	5.340	-.111	2.261
-	-.09057 (2.25)	-	-	.8733	.7611	22.469	1.771	5.180	.468	1.066
-	-	-	-.005136 (5.65)	.6401	.6374	10.884	1.761	5.340	.620	.800
-.001270 (3.46)	-	-.3066 (7.56)	-	.9655	.9511	51.239	1.796	3.090	-.298	2.649
-	-	-	-.0001778 (1.10)	-.2881	-.4598	7.254	1.761	5.340	.715	.585
-	-	-	-	.7471	.6929	9.599	1.771	5.180	.391	1.206
-	-	-	-.00003029 (.49)	-.6354	-.7377	4.810	1.753	5.680	.805	.394
-	-	-.08484 (1.27)	-	.4758	-.6726	3.822	1.761	5.340	.749	.502
-	-	-	-.0001077 (.66)	-	-	4.647	1.761	5.340	.613	.792
-	-	-	-	.5527	.4568	6.084	1.771	5.180	.157	1.660
-	-	-	-.00001555 (.59)	.1771	-.0047	.678	1.771	5.180	.434	1.131
-	-	-	-	.3792	.1205	1.120	1.796	3.090	.272	1.405

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2

of positive autocorrelation in the per capita fish consumption model.

The second group of models in this series used the series dependent variables and individual five basic political violence indicators as explanatory variables.¹³⁸ All of the intercepts in this group of models were positive and very significant. The significant individual political violence variables were not uniform among the models. In the per capita rice consumption model, the significant variables were riots and armed attacks during the "pre-insurgency" period. The per capita fish consumption model showed riots and armed attacks during the "limited war" period and protest demonstrations during the "insurgency" period as significant explanatory variables. The per capita pork consumption model showed only armed attacks during the "limited war" period as significant. The over-all correlation in all three models was significant at the 95 percent confidence level. The autocorrelation for the per capita pork consumption model was in the inconclusive range.

Lag structures were developed for each dependent variable in the series using the series dependent variables and alternately the annual cumulative political violence events index and the individual five basic political violence indicators as the independent variable.

The first set of lag structures employed per capita rice consumption as the dependent variable and alternately

¹³⁸See Table 28.

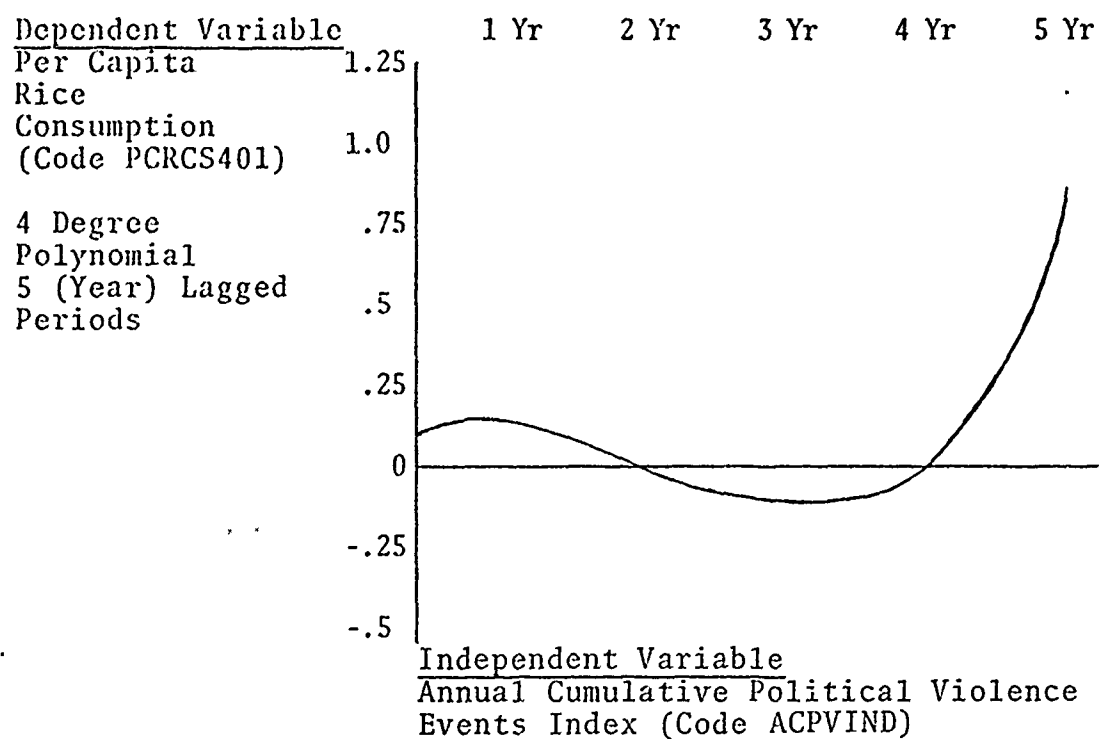
the annual cumulative political violence events index and the armed attacks as the independent variable.¹³⁹ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first lag structure had a mild lag effect in the first year, no effect in the second year, a mild negative effect in the third year, no effect in the fourth year and significant lag effects in the fifth year. In the second structure, there were significant lag effects in the first two years, insignificant lag effects in the third year and mild lag effect in the fourth and fifth years. The impact of political violence was reflected in per capita rice consumption in the first, second and fifth years.

The second set of lag structures employed per capita fish consumption as the dependent variable and alternately the annual cumulative political violence events index and protest demonstrations as the explanatory variable.¹⁴⁰ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first lag structure had a mild effect in the first year, no effect in the second year, mild negative effect in the third year, no effect in the fourth year and a very significant effect in the fifth year. In the second structure, there was insignificant effect in the first four years and very significant effect in the fifth year. The impact of political violence

¹³⁹See Figure 28(a) and 28(b).

¹⁴⁰See Figure 29(a) and 29(b).

(a)



(b)

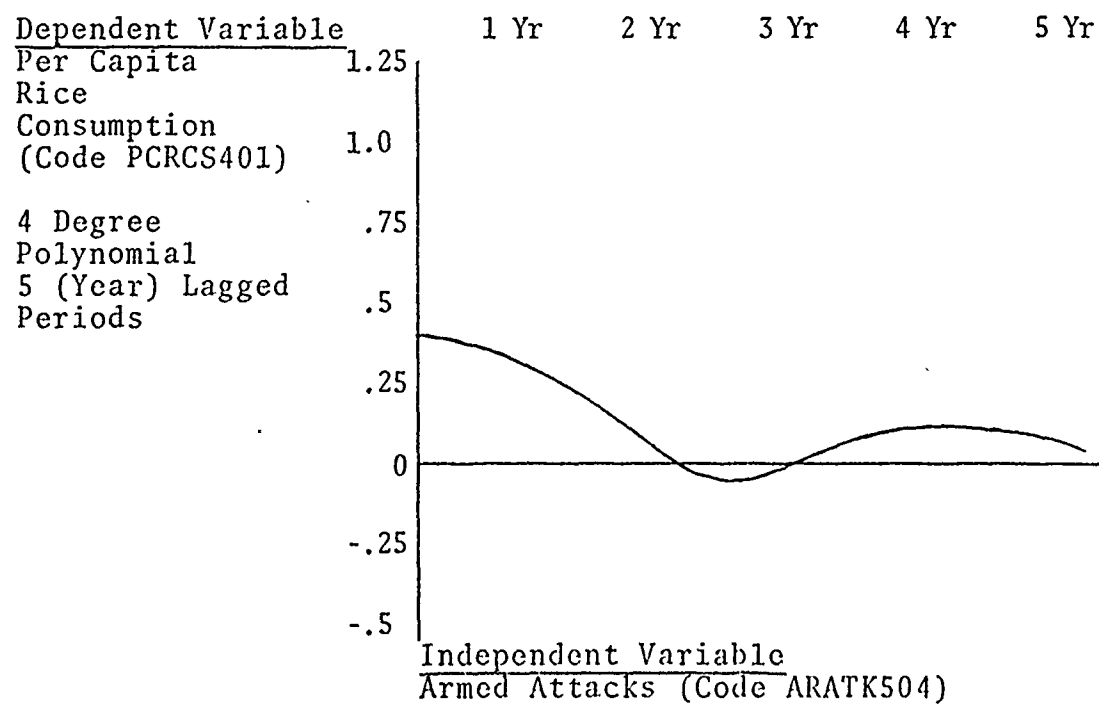
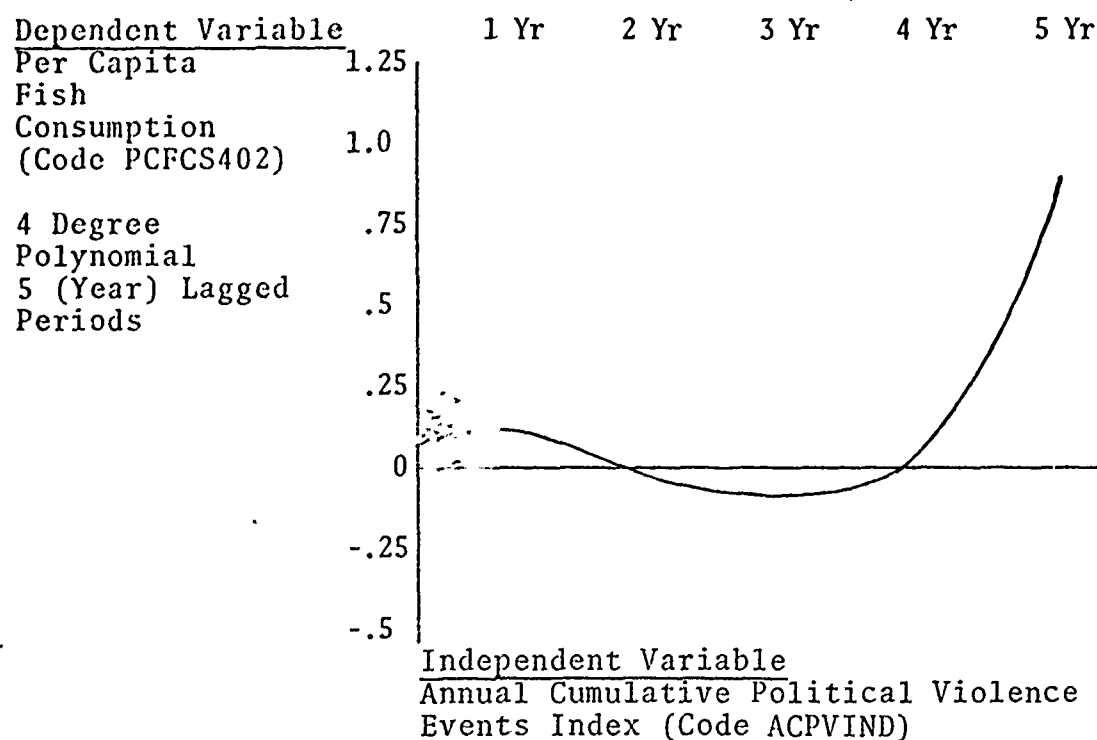


Fig. 28. Lag structures of per capita rice consumption.

(a)



(b)

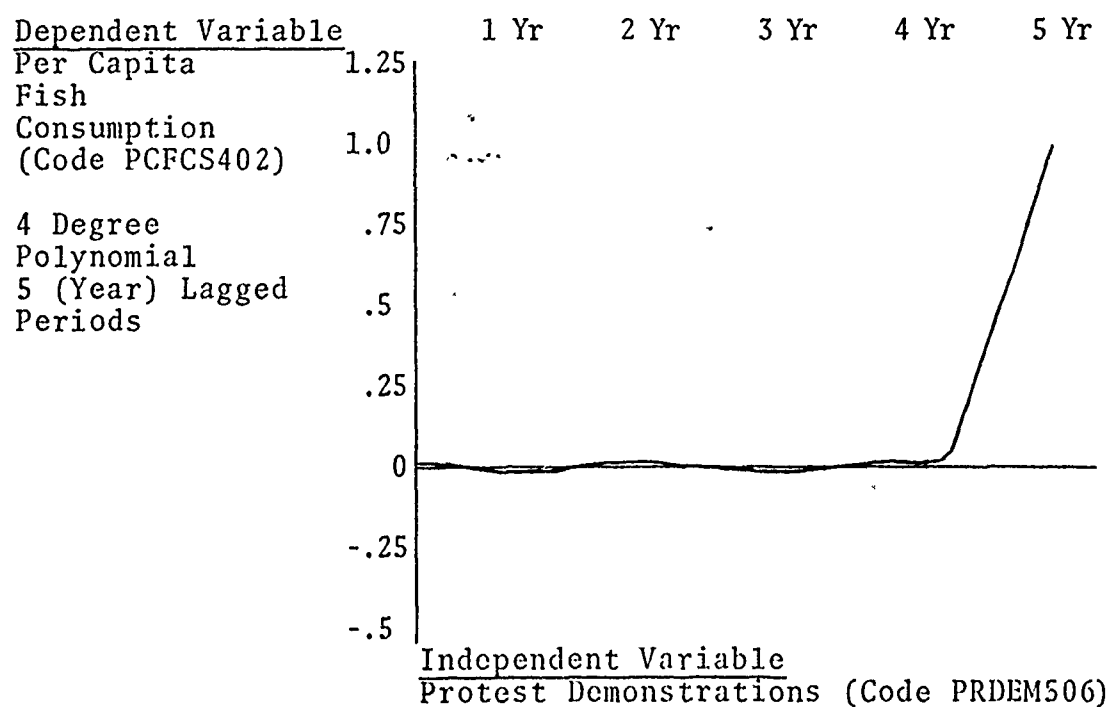


Fig. 29. Lag structures of per capita fish consumption.

was largely reflected in per capita fish consumption in the fifth year.

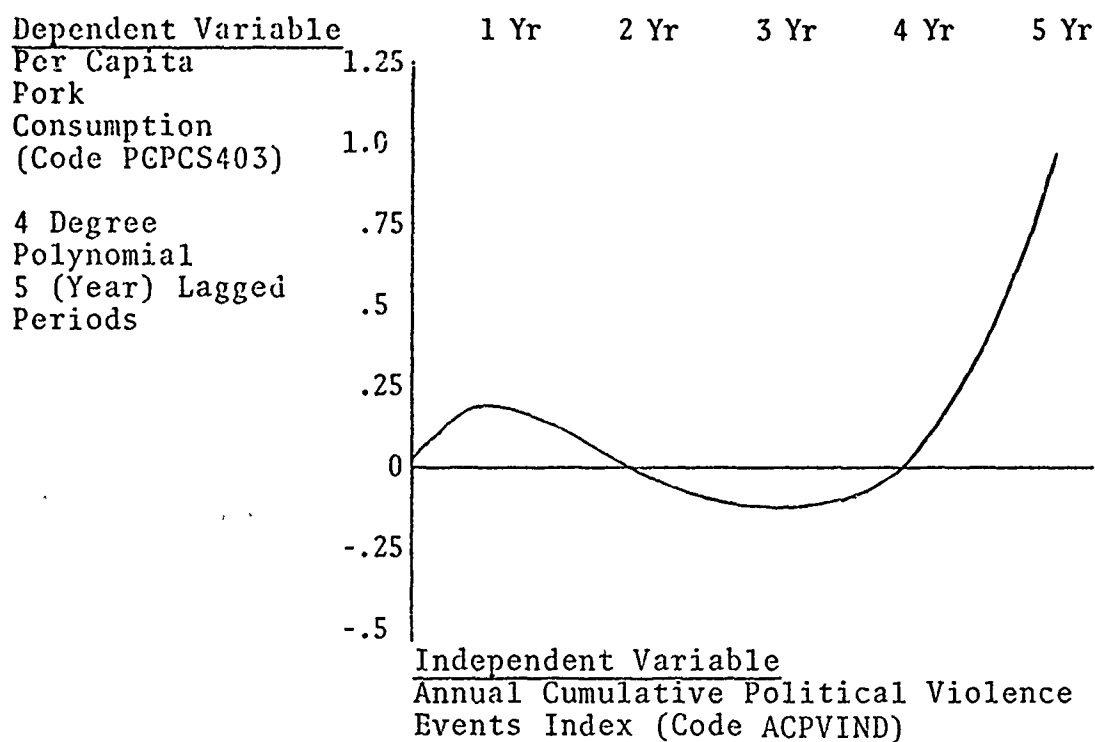
The third set of lag structures used per capita pork consumption as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent variable.¹⁴¹ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first lag structure had mild positive effect in the first year, no effect in the second year, mild negative effect in the third year, no effect in the fourth year and a very significant effect in the fifth year. The second model showed insignificant effect during the first four years and a very significant effect during the fifth year. The impact of political violence was reflected in annual pork consumption in the first and fifth years.

Luxury Foods

Sugar and beverage consumption are key indicators of economic development in the less developed countries. These foods were considered as luxury consumption items only in the context of less-developed countries in general, and South Vietnam in particular. A series of multiple regression models were constructed using per capita sugar and per capita beverage consumption as the dependent variables. Alternately, the annual cumulative political violence events index and the

¹⁴¹See Figure 30(a) and 30(b).

(a)



(b)

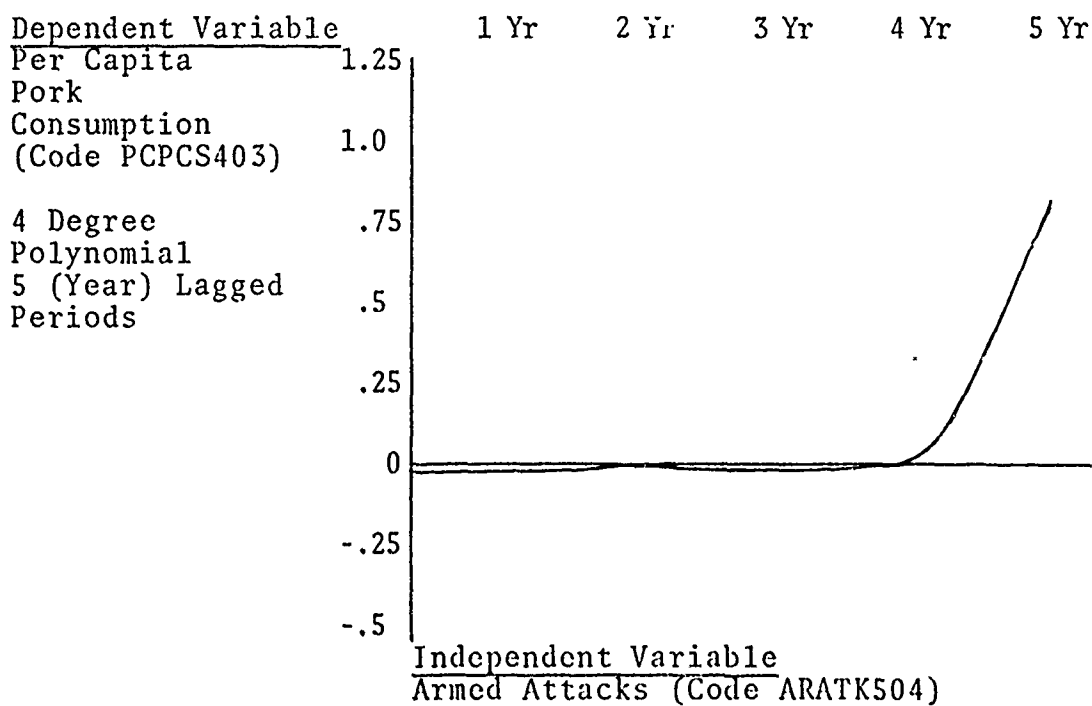


Fig. 30. Lag structures of per capita pork consumption.

individual five basic political violence indicators was the explanatory variable in these models.¹⁴²

In the first group of models, the series dependent variables were used. The annual cumulative political violence events index was the explanatory variable.¹⁴³ The intercepts in both models in this group were positive and very significant. The annual cumulative political violence events index was significant at the 95 percent confidence level. The overall correlation in both models was very significant. The R^2 Bar values for the two models were .3142 and .3825 respectively. Autocorrelation in both models was in the inconclusive range.

The next group of models in this series used the series dependent variables and the individual five basic political violence indicators as the explanatory variables.¹⁴⁴ The intercepts in both models were positive and very significant. The significant individual political violence variables in the per capita sugar consumption model were armed attacks, protest demonstrations and government sanctions. The significant explanatory variables in the per capita beverage consumption model were riots and armed attacks. The protest demonstrations variable was marginally significant in the per capita beverage consumption model. The overall correlation in both models was very significant. The R^2 Bar values for

¹⁴²See Table 28.

¹⁴³Ibid.

¹⁴⁴Ibid.

the models were .6161 and .6031 respectively. Autocorrelation was in the inconclusive range in the per capita beverage consumption model.

A series of models were constructed which used intercept and slope dummy variables to separate the data into the three political violence time periods. The dependent variables in this series were the same as those used in the first series. The explanatory variables were alternately the annual cumulative political violence events index and the individual five basic political violence indicators.¹⁴⁵

The first group of models in this series used the series dependent variables and the annual cumulative political violence events index as the explanatory variable.¹⁴⁶ The intercepts for both models were positive but significant in only the "pre-insurgency" and "limited war" periods. The annual cumulative political violence events index was very significant in the per capita beverage consumption model. This index was insignificant in the per capita sugar consumption model. The over-all correlation in both models was significant at the 95 percent confidence level. The R^2 Bar values for the models was .1031 and .8862 respectively. There was positive autocorrelation in the per capita sugar consumption model.

The second group of models in this series used the series dependent variables and the individual basic five

¹⁴⁵See Table 29.

¹⁴⁶Ibid.

political violence indicators as the explanatory variables.¹⁴⁷

The intercepts in these models were all positive and very significant except in the per capita beverage consumption model during the "limited war" period. The per capita sugar consumption model had the following significant explanatory variables: armed attacks, protest demonstrations, and government sanctions during the "limited war" period. The significant explanatory variables in the per capita beverage consumption model were armed attacks and protest demonstrations during the "insurgency" period. The over-all correlation in both models was highly significant at the 95 percent confidence level. The R^2 Bar for the models was .9025 and .7611 respectively. The test for autocorrelation in both models was in the inconclusive range.

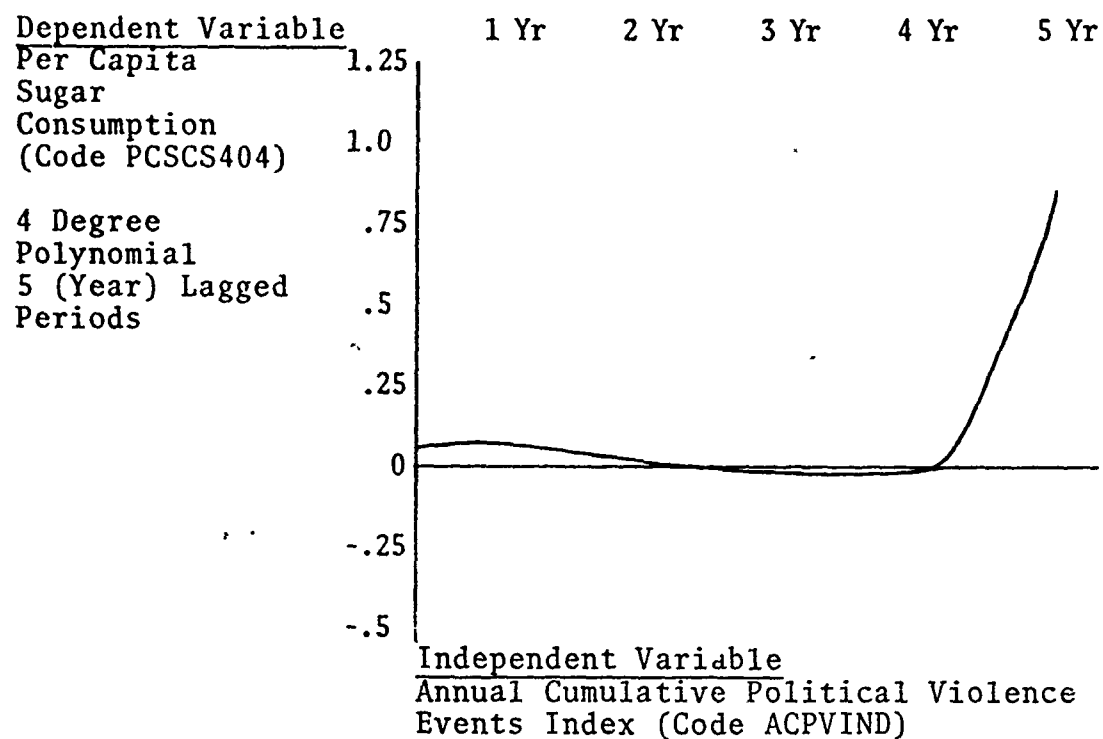
Lag structures were developed in which per capita sugar and beverage consumption were the dependent variables. Alternately, the annual cumulative political violence events index and armed attacks were the independent variable in these structures. The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period.

In the first set of lag structures, per capita sugar consumption was used as the dependent variable. Alternately, the annual cumulative political violence events index and armed attacks were the independent variable.¹⁴⁸ In both

¹⁴⁷See Table 29.

¹⁴⁸See Figure 31(a) and 31(b).

(a)



(b)

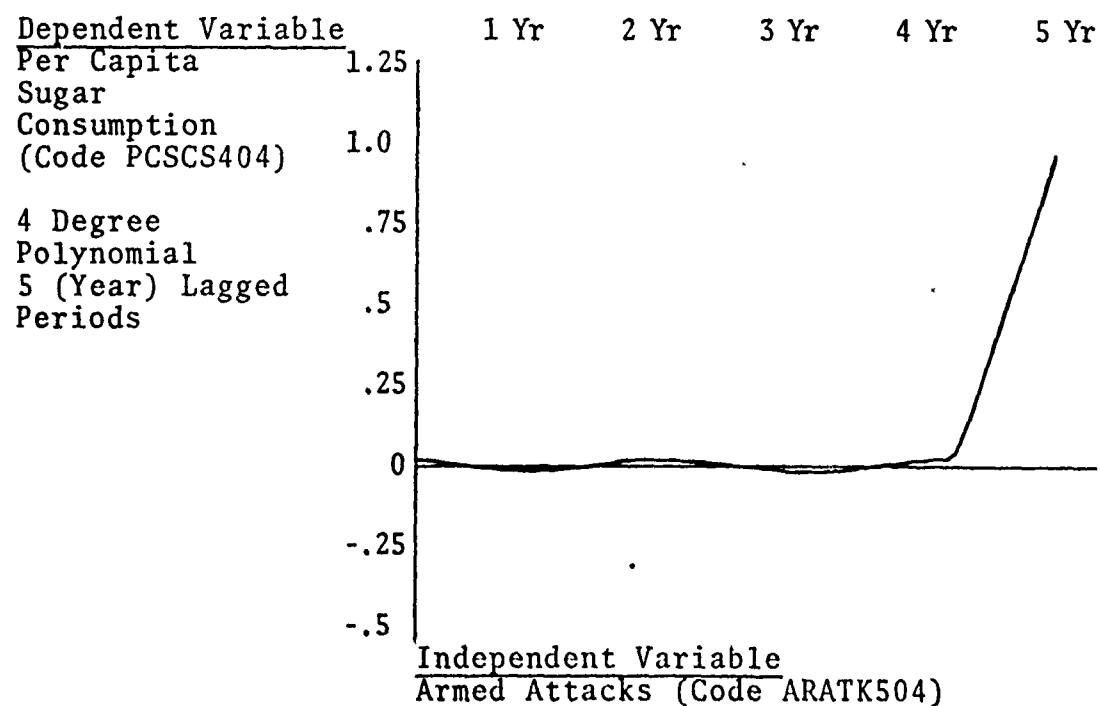


Fig. 31. Lag structures of per capita sugar consumption.

structures, the lag effect was mild to insignificant during the first four years. There was a very significant positive lag effect in both structures in the fifth year. The impact of political violence was reflected in per capita sugar consumption in the fifth year.

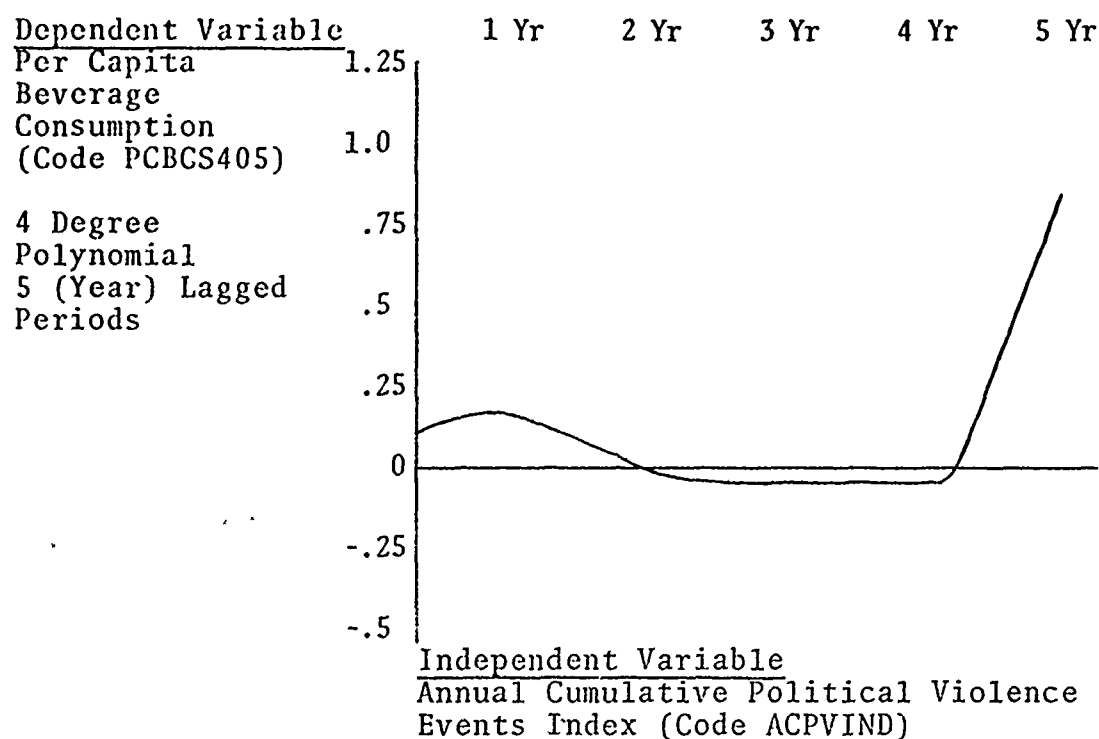
Per capita beverage consumption was used as the dependent variable in the second set of lag structures. Alternately, the annual cumulative political violence events index and armed attacks was the explanatory variable.¹⁴⁹ In the first structure in which the cumulative political violence events index was used as the independent variable, there was a mild lag effect during the first year, no lag effect during the third through the fourth year and a significant lag effect in the fifth year. In the second structure, which used armed attacks as the explanatory variable, the lag effect was insignificant during the first four years. There was a very significant positive lag effect in the fifth year. The impact of political violence was reflected in per capita beverage consumption in the fifth year.

Industrial Goods

The consumption of industrial goods is an indicator of economic development in the less-developed countries. Countries such as South Vietnam, which were building their infrastructure and industry, were expected to increase their consumption of these goods and services. Per capita

¹⁴⁹See Figure 32(a) and 32(b).

(a)



(b)

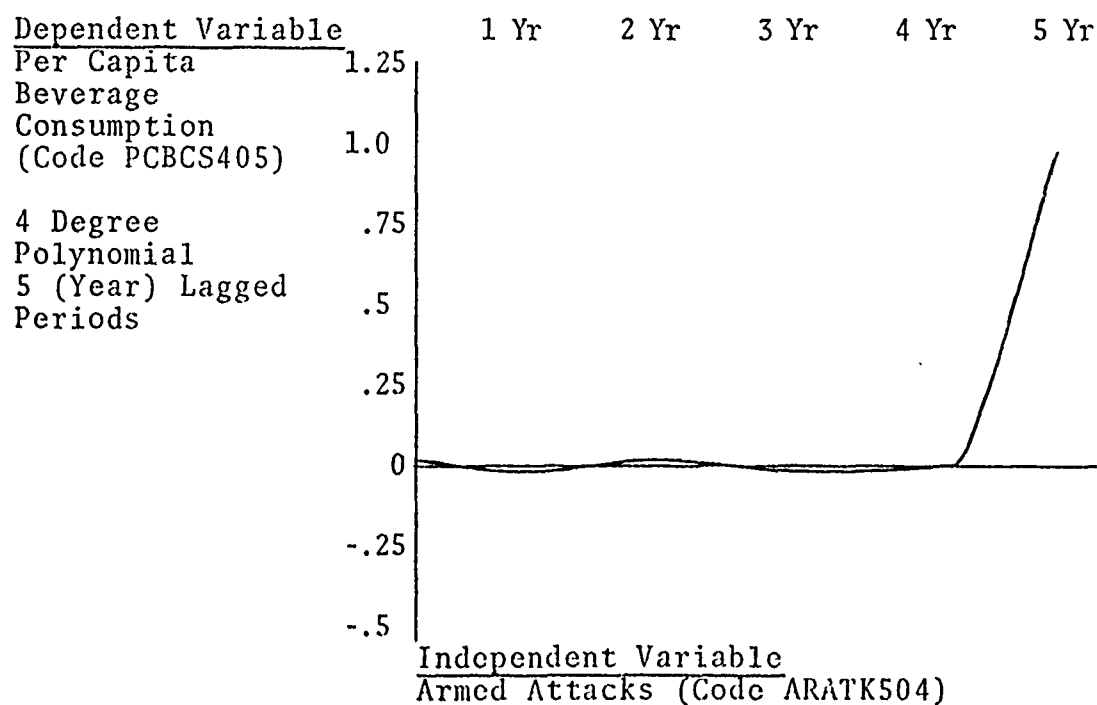


Fig. 32. Lag structures of per capita beverage consumption.

selected petroleum and per capita cement consumption were selected as indicators of industrial goods consumption in South Vietnam. A series of multiple regression models were constructed in which these indicators were the dependent variable. Alternately, the cumulative political violence events index and the individual five basic political violence indicators were the explanatory variable.¹⁵⁰

The first group of models in this series used the series dependent variables and the annual cumulative political violence events index as the independent variable.¹⁵¹ The intercepts of these models were positive and very significant. The annual cumulative political events index was significant in the per capita selected petroleum consumption model. This variable was significant in the per capita cement consumption model at the 85 percent confidence level. The over-all correlation in the per capita selected petroleum consumption model was significant at the 95 percent confidence level. However, over-all correlation was insignificant in the per capita cement consumption model. There was positive autocorrelation in the per capita selected petroleum consumption model. The test for autocorrelation in the per capita cement consumption model was in the inconclusive range.

The second group of models in this series used the series dependent variable and the individual five basic

¹⁵⁰See Table 28.

¹⁵¹Ibid.

political violence indicators as explanatory variables.¹⁵² The intercepts for both models were positive and very significant. The significant explanatory variables in the per capita selected petroleum consumption model were armed attacks, protest demonstrations and government sanction. In the per capita cement consumption model, the significant explanatory variables were riots and armed attacks. The over-all correlation in both models was very significant at the 95 percent confidence level. The R^2 Bar values for the two models were .6840 and .4929 respectively. Autocorrelation conditions in the per capita selected petroleum consumption model was in the inconclusive range.

A series of models was constructed using the previous series dependent variables and dummy variables which represented the annual cumulative political violence events index and the individual five basic political violence indicators. Also, intercept dummy variables were used in the models.¹⁵³

The first group of models in this series used the series dependent variable and the annual cumulative political violence events index.¹⁵⁴ The intercepts were positive and significant for each model in only the "pre-insurgency" and "insurgency" political violence periods. The cumulative political violence events index was significant at the 95 percent confidence level only in the per capita selected

¹⁵²See Table 28.

¹⁵³See Table 29.

¹⁵⁴Ibid.

petroleum consumption model during the "insurgency" period. This explanatory variable was significant in the per capita cement consumption model at the 85 percent confidence level during the "limited war" period. The over-all correlation in both models was significant at the 95 percent confidence level. The test for autocorrelation in both models was near the lower limit of the inconclusive range.

The second group of models in this series used the series dependent variable and the individual five political violence indicators as the explanatory variables.¹⁵⁵ The intercepts in all three political violence time periods were positive and very significant. The significant explanatory variables in the per capita selected petroleum consumption model were armed attacks, protest demonstrations and government sanctions during the "limited war" period. In the per capita cement consumption model, the significant explanatory variable was riots during the "limited war" period. The over-all correlation in both models was very significant at the 95 percent confidence level. The R^2 Bar for the models was .9511 and .6922 respectively. The test for autocorrelation conditions in the per capita cement consumption model was in the inconclusive range.

Lag structures were developed using per capita selected petroleum consumption and cement consumption as dependent variables. Alternately, the annual cumulative political

¹⁵⁵See Table 29.

violence events index and armed attacks was the explanatory variable.

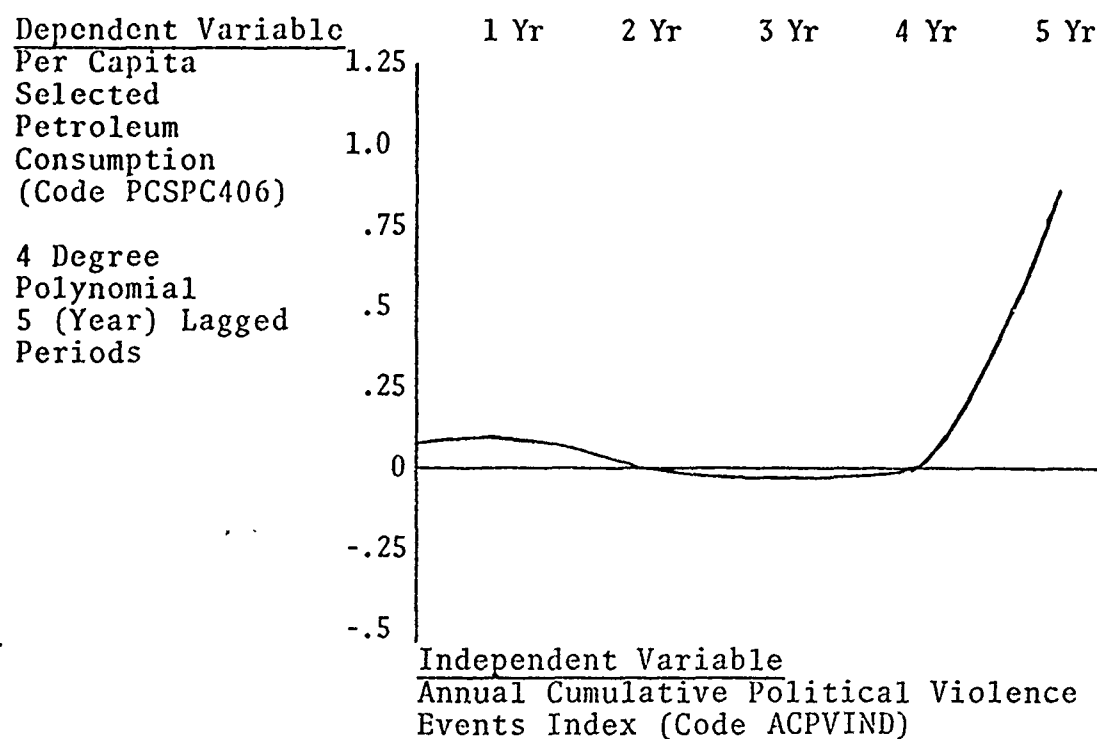
The first pair of lag structures used per capita selected petroleum consumption as the dependent variable. Alternately, the annual cumulative political violence events index and armed attacks were used as the independent variable.¹⁵⁶ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. In the first structure, the lag effect was mild during the first year, insignificant during the second through the fourth year and very significant in the fifth year. In the second lag structure, the lag effect was insignificant during the first four years and very significant during the fifth year. The lag effect of political violence was reflected in per capita selected petroleum consumption in the fifth year.

The second pair of lag structures employed the per capita cement production as the dependent variable and alternately the annual cumulative political violence events index and armed attacks as the independent variable.¹⁵⁷ The "best fit" structure for both models was a fourth degree polynomial with a five year lagged period. The first structure reflected mild effect in the first year, no effect in the second year, a mild negative effect in the third and fourth years and a very significant effect in the fifth year. In the second model, the effect was significant in the first

¹⁵⁶Sec Figure 33(a) and 33(b).

¹⁵⁷Sec Figure 34(a) and 34(b).

(a)



(b)

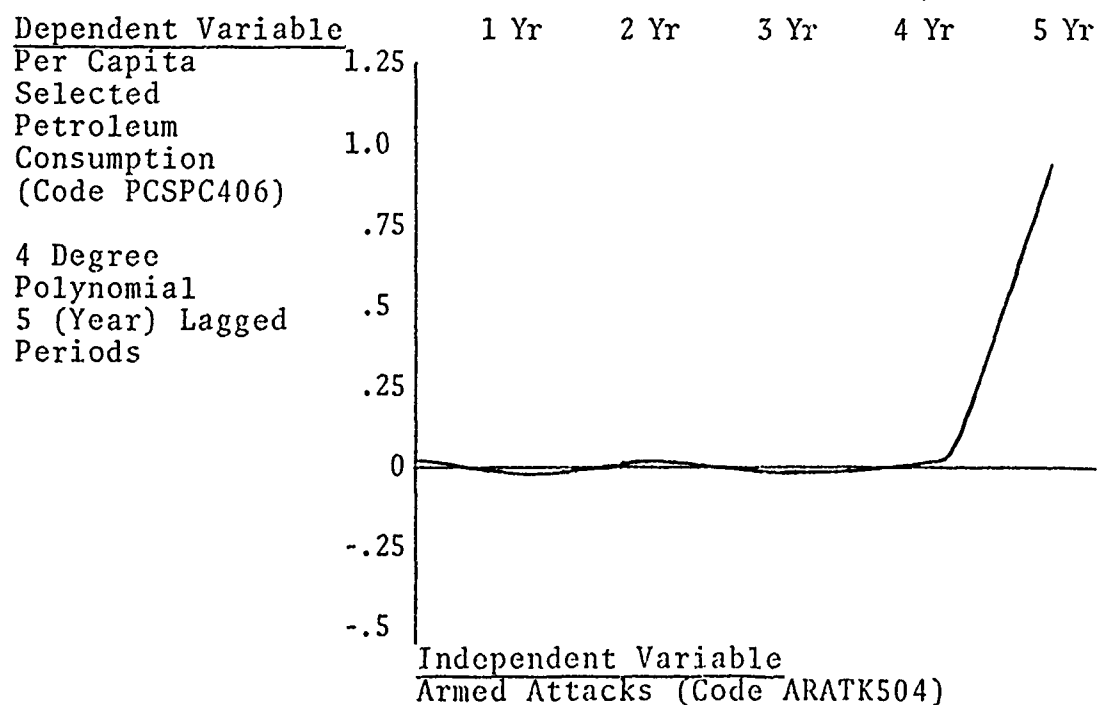
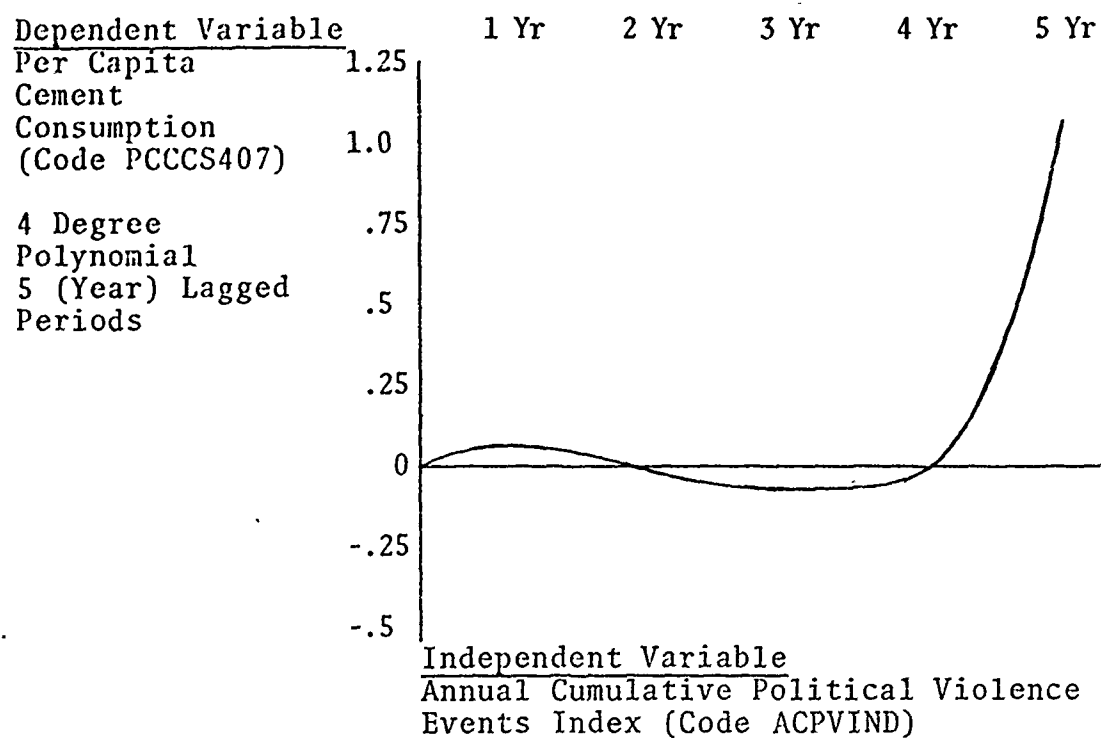


Fig. 33. Lag structures of per capita selected petroleum consumption.

(a)



(b)

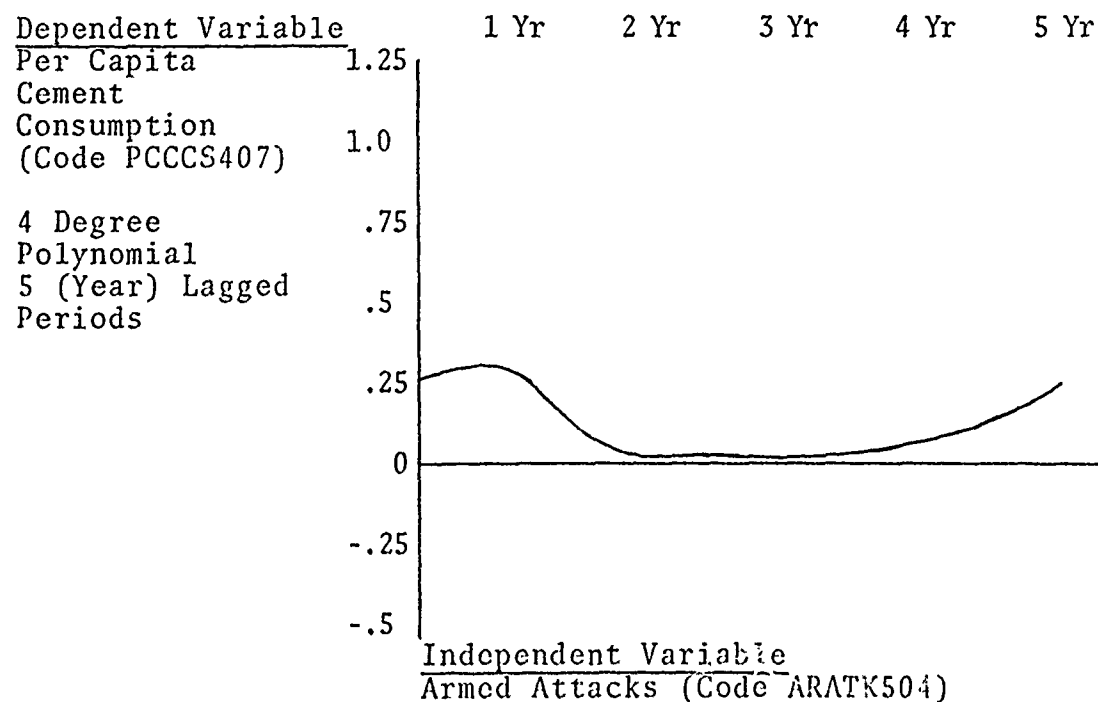


Fig. 34. Lag structures of per capita cement production.

year, and insignificant in the second and third years, and there was a mildly positive effect in the fourth and fifth years. The impact of political violence was reflected in per capita cement consumption in the first and fifth years.

Soft Goods

The consumption of soft goods in the less developed countries are thought to reflect an element of affluence. In some less developed countries these soft goods are also referred to as non-essential goods. Three indicators of soft goods consumption which were less essential than basic foods in South Vietnam were selected for analysis in this study.

A series of multiple regression models were constructed using per capita domestic fabric consumption, per capita pharmaceutical consumption and per capita paper products consumption as the dependent variables. Alternately, the annual cumulative political violence events index and the individual five basic political violence indicators were used as the explanatory variable.¹⁵⁸

In the first group of models, the series dependent variables were used and the annual cumulative political violence events index was the independent variable.¹⁵⁹ All of the intercepts in these models were positive and very significant. The explanatory variable, the annual cumulative political violence events index, was significant at the 95

¹⁵⁸See Table 28.

¹⁵⁹Ibid.

percent confidence level in only the per capita paper products consumption model. Likewise, the only model in which there was over-all significant correlation was in the per capita paper products consumption model. Also, the R^2 Bar values were low in the per capita domestic fabric and pharmaceutical consumption models compared to the results obtained for other consumption variable models. The R^2 Bar of these respective models was .0070 and .0018. In the per capita paper products consumption model, the R^2 Bar was .2140. There was autocorrelation in the per capita domestic fabric and pharmaceutical consumption models. Autocorrelation conditions in the per capita paper products consumption model was in the inconclusive range.

In the second group of models, the series dependent variables were used as the dependent variables and the individual five political violence indicators were the explanatory variables.¹⁶⁰ The intercepts in this group of models were all positive and very significant. The individual political violence explanatory variables, which were significant at the 95 percent confidence level for each model, were as follows: The per capita domestic fabric consumption model showed deaths from political violence and government sanctions; the per capita pharmaceutical consumption model showed no explanatory variables and the per capita paper products consumption model showed riots. The over-all correlation was significant at the 95 percent confidence

¹⁶⁰ See Table 28.

level in only the per capita domestic fabric consumption model. The presence of autocorrelation conditions were in the inconclusive range in the per capita domestic fabric and pharmaceutical consumption models. There was positive autocorrelation in the per capita paper products consumption model.

A second series of multiple regression models was constructed using the same dependent variables which were used in the first series. Alternately, dummy variables, which represented the annual cumulative political violence events index and the individual five basic political violence indicators, was the independent variable. Dummy intercept variables were used in these models.¹⁶¹

In the first group of models, the series dependent variables were used as the dependent variables. The annual cumulative political violence indicator was the independent variable.¹⁶² The slopes were all positive. However, the significant slopes were not consistent throughout the three models. The slope of the per capita domestic fabric consumption model was significant only during the "limited war" period. The slope of the per capita pharmaceutical consumption model was significant during the "pre-insurgency" and "limited war" periods. The per capita paper products consumption model was significant during all three political violence time periods. There were no significant individual

¹⁶¹See Table 29.

¹⁶²Ibid.

political violence indicators in the per capita domestic fabric consumption model. The only significant explanatory variable in the per capita pharmaceutical consumption model was riots during the "limited war" period. There were no significant independent variables in the per capita paper products consumption model. However, riots in the "limited war" period were marginally significant in this model. The over-all correlation was significant at the 95 percent confidence level in the per capita domestic fabric and pharmaceutical consumption models. The over-all correlation, however, was insignificant in the per capita paper products consumption model. There was positive autocorrelation in the per capita domestic fabric consumption model. The tests for autocorrelation in the per capita pharmaceutical and paper products consumption models were in the inconclusive range.

In the second group of models in this series, the series dependent variables were used as the dependent variables. The individual five basic political violence variables were the explanatory variables in this group of models. The slopes were all positive. However, there were inconsistencies in the political violence time periods in which the intercepts were significant. In the per capita domestic fabric consumption model, the intercept was significant only in the "limited war" period. In the per capita pharmaceutical and paper products consumption models, the intercepts were very significant in all three political violence time periods. The significant explanatory variables also differed

between models. In the per capita domestic fabric consumption model, there were no significant explanatory variables at the 95 percent confidence level. Government sanctions during the "limited war" period was significant in this model at the 85 percent confidence level. In the per capita pharmaceutical consumption model, riots was a significant explanatory variable in the "limited war" period. There were no explanatory variables which were significant at the 95 percent confidence level in the per capita paper products consumption model. Riots were significant at the 85 percent confidence level during the "insurgency" and "limited war" periods in this model. The over-all correlation in the per capita domestic fabric and pharmaceutical consumption models was significant. The over-all correlation in the per capita paper products consumption model was insignificant at the 95 percent confidence level. There was positive autocorrelation in the per capita domestic consumption model. The autocorrelation conditions in the per capita pharmaceutical and paper products consumption models were in the inconclusive range.

A group of lag structures was constructed which used per capita domestic fabric consumption, per capita pharmaceutical consumption and per capita paper consumption as the dependent variables. Alternately, the annual cumulative political violence events index and riots was used as the explanatory variable. A fourth degree polynomial with a five year lagged period provided the "best fit" for each lag structure.

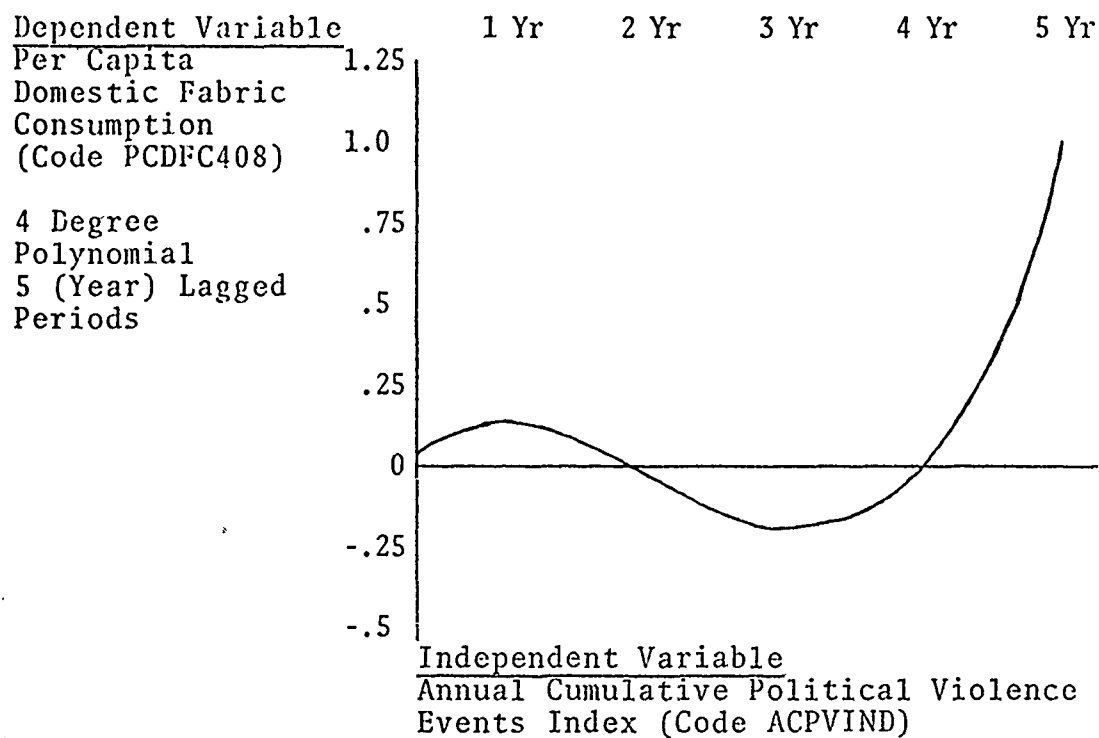
The first set of lag structures used per capita domestic fabric consumption as the dependent variable. Alternately, the annual cumulative political violence events index and riots was used as the explanatory variable.¹⁶³ In the first lag structure, there was mild effect in the first year, no effect in the second year, a significant negative effect in the third year, a mild negative effect in the fourth year and a very significant effect in the fifth year. In the second lag structure, there was a mild lag effect in the first year, a mild negative effect in the second through the fourth years and mild lag effect in the fifth year. The lag effect of political violence was reflected in domestic fabric consumption in the first and fifth years.

The second set of lag structures used per capita pharmaceutical consumption as the dependent variable. Alternately, the annual cumulative political violence events index and riots was used as the explanatory variable.¹⁶⁴ In the first lag structure, there was a mild positive effect during the first year, no effect during the second year, a mild negative effect during the third year, no effect during the fourth year and a very significant effect during the fifth year. In the second lag structure, there was a significant effect during the first year, a mild effect during the second year, no effect during the third and fourth years and a mild effect during the fifth year. The effect of political violence on

¹⁶³ See Figure 35(a) and 35(b).

¹⁶⁴ See Figure 36(a) and 36(b).

(a)



(b)

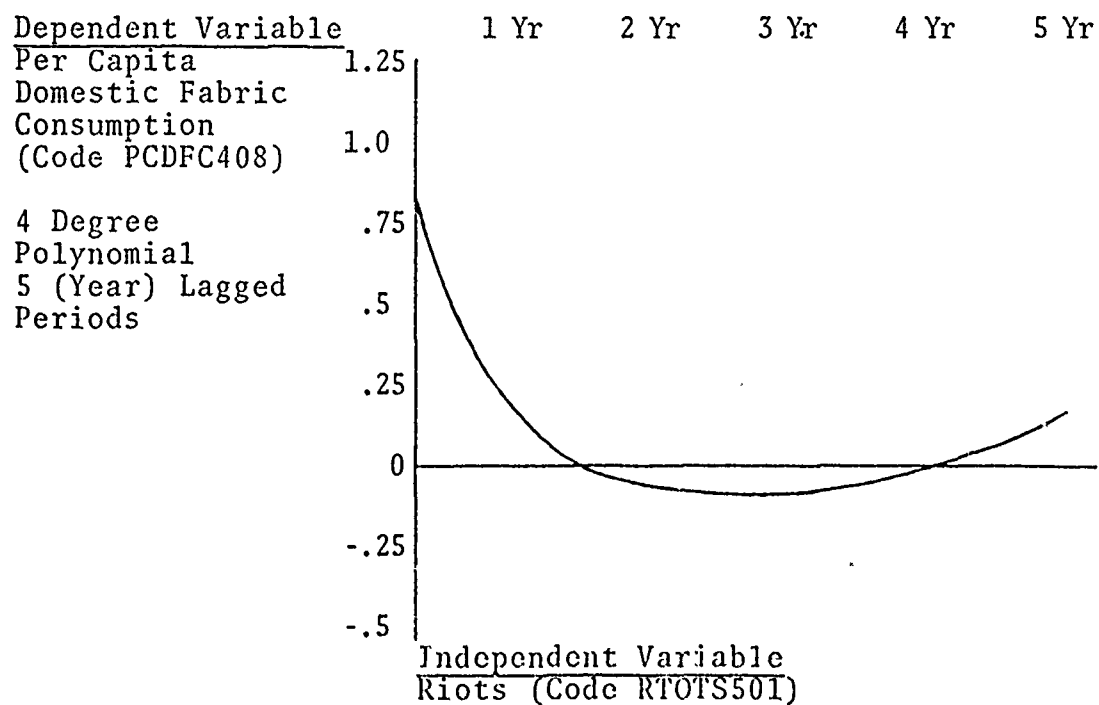
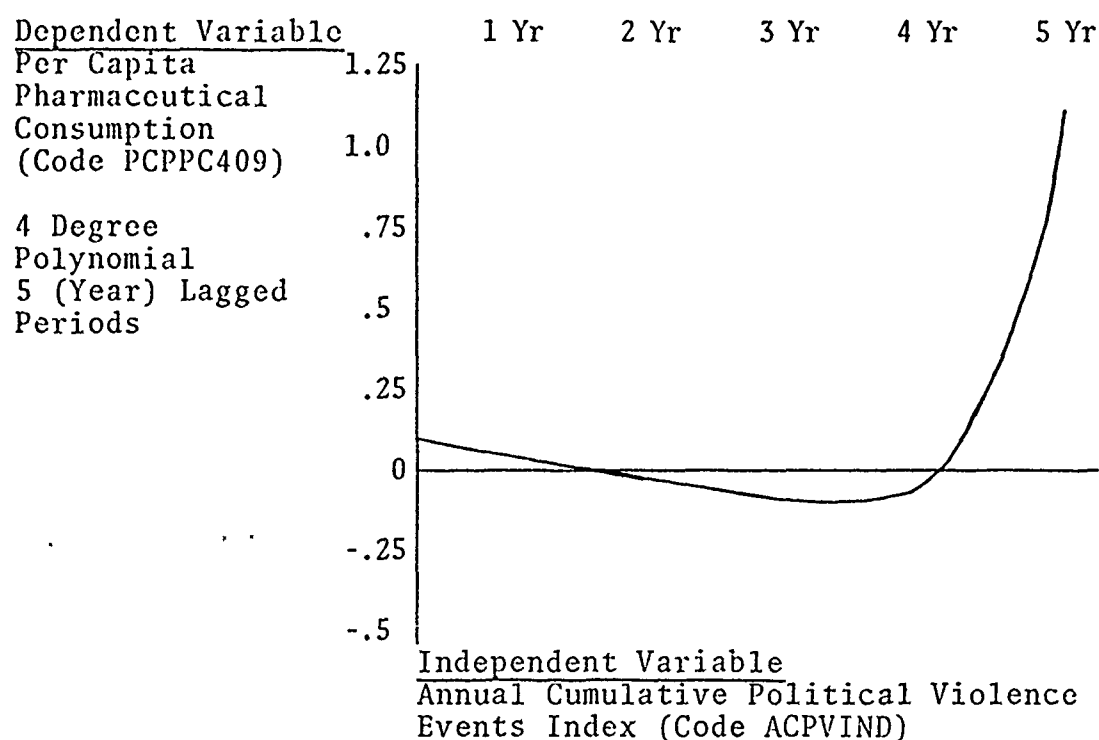


Fig. 35. Lag structures of per capita domestic fabric consumption.

(a)



(b)

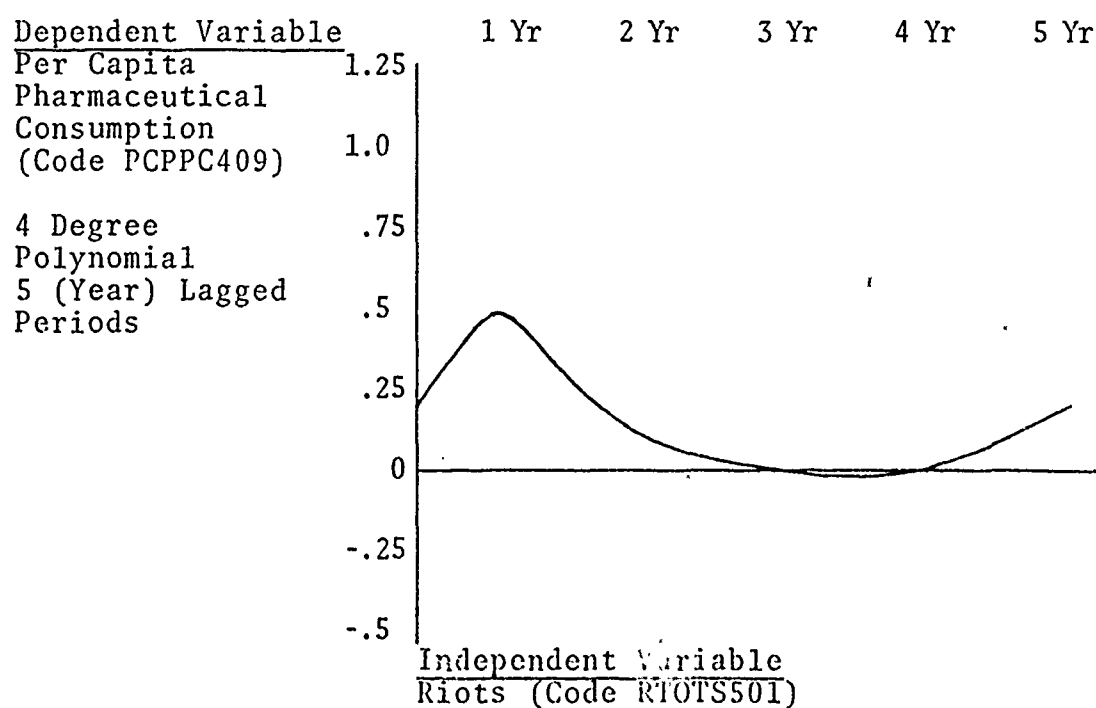


Fig. 36. Lag structures of per capita pharmaceutical consumption.

per capita pharmaceutical consumption was reflected in the first and fifth years.

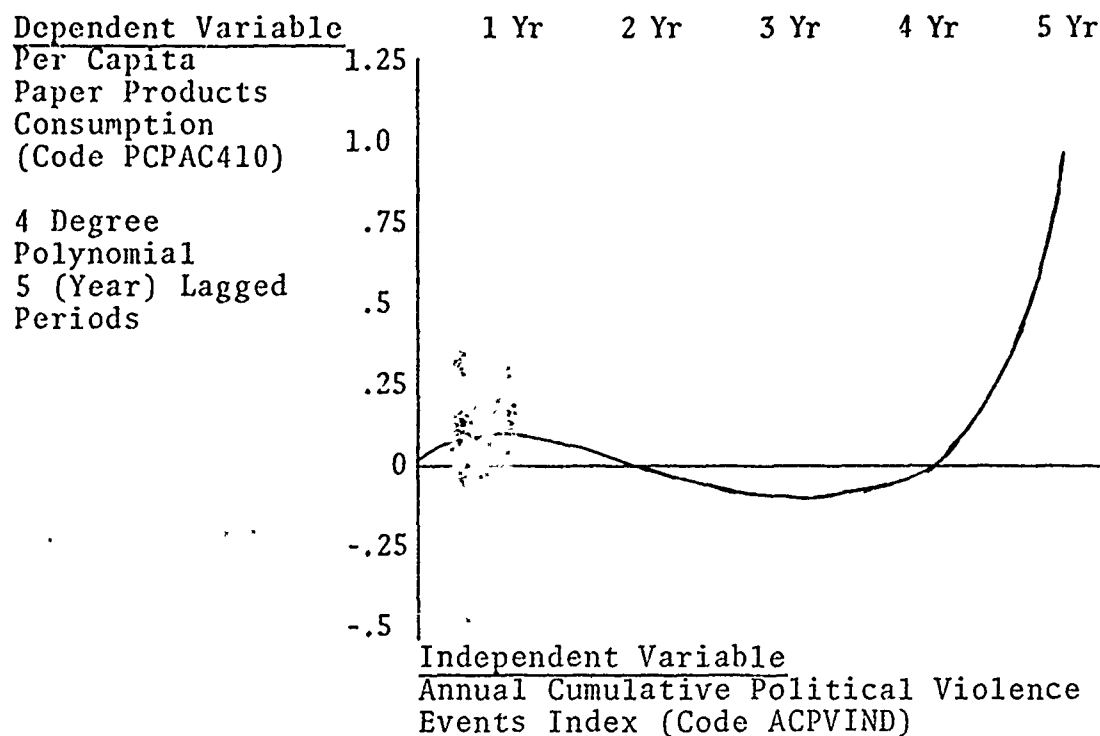
The third set of lag structures used per capita paper products consumption as the dependent variable. Alternately, the annual cumulative political violence events index and riots was the explanatory variable.¹⁶⁵ In the first lag structure, there was a mild lag effect during the first year, no effect in the second year, a mild effect in the third year, no effect in the fourth year and a very significant effect during the fifth year. The second lag structure showed a significant effect during the first year, a mild effect during the second year, no effect during the third and fourth years and a significant effect during the fifth year. The effect of political violence on per capita paper products consumption was in the first and fifth years.

Summary

The impact of political violence on patterns of consumption in South Vietnam was uneven. The strength of the significance of the association between per capita consumption and political violence was not the same for each consumption variable. The significance of the association was very strong for some consumption items while it was very weak for others. Of particular importance to this study was the finding that the impact of political violence on consumption patterns was not the same during each of the political

¹⁶⁵See Figure 37(a) and 37(b).

(a)



(b)

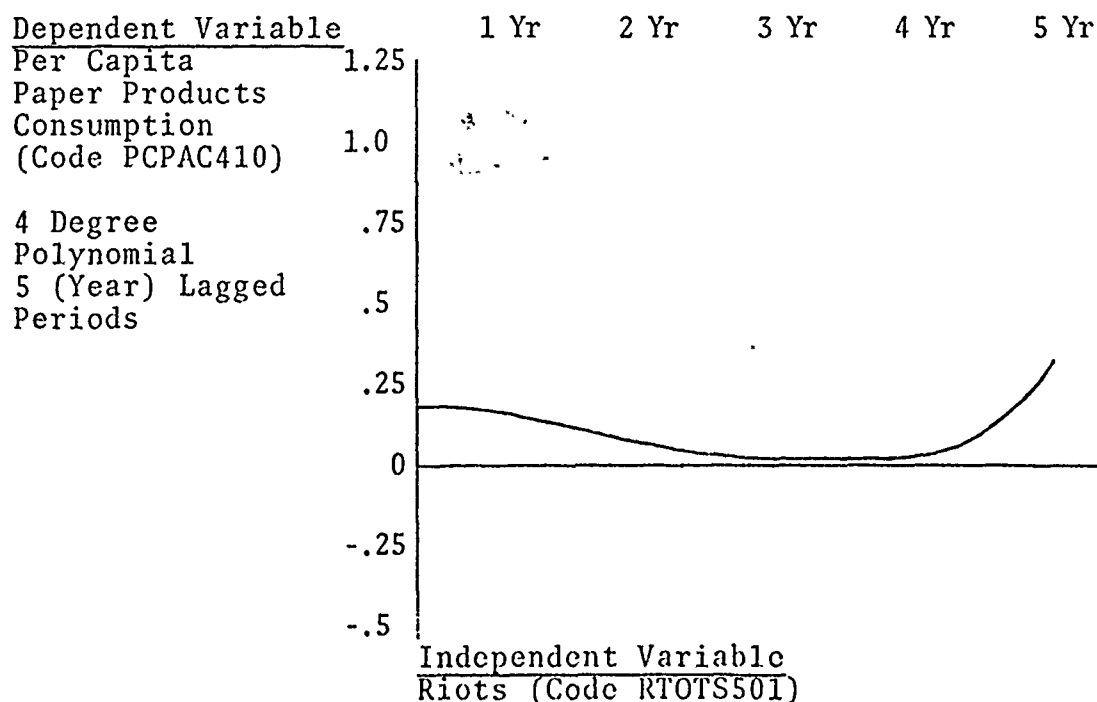


Fig. 37. Lag structures of per capita paper products consumption.

violence time periods. The strength of the association between consumption pattern variables and the annual cumulative political violence events index was different among the consumption variables. The composition of the individual political violence variables, which explained deviation in consumption patterns, was not homogeneous among the consumption variables. The lag effect of political violence was generally reflected in the first and fifth year in the patterns of consumption.

The significance of the association between political violence and basic foods was very strong except for per capita rice consumption which was insignificant. The annual cumulative political violence events index was a stronger explanatory variable in the basic foods models than the individual indicators of political violence. However, these individual explanatory political violence variables were not homogeneous among the basic foods models. The separation of the data through the use of slope and intercept dummy variables resulted in the detection of significant shift parameters between the political violence time periods. These shifts became institutionalized in the data. There was no distinguishable pattern among the basic food models with respect to parameter shifts. There were structural changes which were evident from the shifting of explanatory variables between the ordinary least squares models and the dummy variable models. The lag effect of political violence on basic food consumption was reflected in the first and fifth years.

The significance of the association between political violence and luxury food consumption was very strong for all the variables in this group. In this case, the individual political violence indicators were more potent explanatory variables than the annual cumulative political violence events index. Shift parameters were also evident in these models when slope and intercept dummies were employed to separate the political violence time periods. The shifts in the data became institutionalized during the "insurgency" and "limited war" periods. There were some structural shifts between the significant explanatory political violence variables found in the ordinary least squares models and in the models which used dummy variables. The impact of political violence was reflected in luxury food consumption during the fifth year.

The significance between the consumption of industrial goods and political violence was significant. In this case, the individual political violence indicators were stronger explanatory variables than the cumulative political violence events index. There were some parameter shifts between the political violence time periods which became institutionalized in the data. The strength of this institutional effect was centered in the "pre-insurgency" and "insurgency" time periods for petroleum consumption and in the "limited war" period for cement consumption. The lag effect of political violence on industrial goods consumption was mildly reflected

in the first year and significantly reflected in the fifth year.

The significance of the association between soft goods consumption and the indicators of political violence was very mixed. In the ordinary least squares model, the strength of the association between political violence and paper products consumption was particularly strong. However the significance of the association between per capita domestic fabric and pharmaceutical consumption and all indicators of political violence was extremely weak. The individual political violence indicators were slightly stronger explanatory variables than the annual cumulative political violence events index. The slope and intercept dummy variables indicated that the impact of political violence was institutionalized in the data only during the "limited war" periods. The lag effect of political violence was reflected in soft goods consumption in the first and fifth years.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The conventional analysis of national marketing development in South Vietnam was a monumental task. This analysis required the consideration of many data series. The task also included the analysis of the impact of political violence on national marketing development and related activities. The need to perform an analysis of political violence greatly expanded the scope of this study.

In order to provide a clear and recappable study, the findings were fully reported and reviewed in Chapter IV. These findings were the basis for the conclusions stated in this chapter. The analysis in the study was complex because of the nature of the research in political violence and marketing development. The extensive coverage of this research, along with its complexity, dictated that a large portion of this last chapter be used as a statement of conclusions. For ease in reading, these conclusions have been underlined. The practical and theoretical implications of the research along with recommendations for further study in this area were also included.

The general thesis that political violence depressed the development of a national marketing system and related business activities in South Vietnam from 1955 through 1972 was not confirmed by the entire data analysis. The major conclusion of this study was that political violence stimulated the development of a national marketing system and related business activities with very few exceptions.

The research techniques which were employed in this study allowed the following groupings of exceptions to this general conclusion: developmental indicators which were depressed or stimulated throughout the entire developmental period, and those which were depressed or stimulated in one or more political violence time period. The significant lag effects of political violence were specified for both developmental indicators which appeared to have been stimulated and depressed.

The mixed results of the study dictated that specific conclusions be stated for the major research question and the three minor research questions. This was accomplished by presenting conclusions about the impact of political violence on a group of developmental indicators or each specific developmental indicator in most cases. A report of the relative potency of political violence indicators as explanatory variables in the study were also made.

Measuring National Marketing Development

National marketing development has traditionally been measured through the use of national economic sector

employment and national income data. These data were frequently disaggregated by sub-sector if the reported data supported the effort, which was the case for South Vietnam. Conventional measures were used both at the sector and sub-sector levels.

Conventional Measures

The initial test of the generally accepted theory that increases in per capita GNP are associated with an increase in the percent of the labor force employed in the tertiary sector was confirmed. The significance of the association between percent of the labor force employed in the tertiary sector and the per capita GNP was very strong and positive. The results of this test were similar to those reported for market economies such as the United States and Great Britain. However, the results for South Vietnam were difficult to compare with other less-developed countries because of the wide range of results which have been obtained for less-developed countries in other studies. The lag scheme developed for this relationship showed that the most significant lag effect of per capita GNP was reflected in the tertiary sector labor force during the second year.

Polynomial Equation Measures

A test of the theory that the percent of the labor force employed in the tertiary sector tends to level off or turn down at higher levels of per capita GNP was conducted. The theory was confirmed in both second and third degree

polynomial equations. In addition, a test was conducted to determine if shift parameters during the three political violence time periods had become institutionalized in the data. The results indicated that significant institutional effects on per capita GNP were concentrated in the "limited war" period. Also, significant structural changes were confirmed for the per capita GNP data during the "insurgency" and "limited war" periods.

Refined Measures

Key authors, Preston and Moyer, contended that the disaggregation of tertiary sector employment and national income data provided a more precise measure of marketing development. This concept was tested in a series of multiple regression models and lag schemes which used disaggregated tertiary sector employment data and disaggregated tertiary sector GDP contribution data.

The significance of the association between the percent of the labor force employed in the tertiary sector and the per capita GNP was stronger than any other tertiary employment and national income relationship tested. The next most significant association was between the percent of the labor force employed in the tertiary sector and the GDP. The association between the percent of the labor force employed in the tertiary sector and its corresponding percent of the GDP contributed by the tertiary sector was insignificant.

The tests to determine if significant shift parameters had occurred in the data indicated that both per capita GNP

and GDP data were institutionalized in the "insurgency" and "limited war" periods. A separate test of the political violence time period intercepts indicated that the labor force data were also institutionalized in the "insurgency" and "limited war" political violence time periods. The significant lag effects of GDP were reflected in the tertiary labor force during the third and fourth years.

The superiority of the per capita GNP over GDP as an explanatory variable of changes in the tertiary labor force was apparently because of the absence of net import-export data in the GDP statistics. Likewise, the insignificant association between the percent of the GDP contributed by the tertiary sector and the percent of the labor force employed in the tertiary sector can be attributed to the weak contributions to the GDP by the tertiary sector. Public administration and defense, and services, comprised a very large part of the tertiary economic sector. The institutionalization of the data in the "insurgency" and "limited war" periods was no doubt a reflection of the volatile economic conditions associated with increases in political violence.

The association between the percent of the labor force employed in the commercial sub-sector and the percent of the GDP contributed by the commercial sub-sector was significant, but the relationship did not correspond to the stated direction. The association between the percent of the labor force employed in the commercial sub-sector and the GDP contributed by the tertiary sector was very significant, but

again the relationship did not correspond to the stated direction. One can therefore conclude that changes in the percent of the labor force employed in the commercial sub-sector were explained by declines in the contributions made to the GDP by both the tertiary sector and the commercial sub-sector. This, no doubt, can again be partially explained by the relatively weak contributions made to sector GDP by the relatively large public administration and defense and services portion of the sector. The test for institutionalization of significant shift parameters revealed that only the percent of the GDP contributed by the tertiary sector during the "insurgency" period was significant. The lag scheme indicated that contributions to the tertiary sector GDP were realized in the commercial sub-sector labor force in the fifth year while contributions to the commercial sub-sector GDP were realized in the commercial sub-sector labor force in the third year.

The marginally significant relationship between the percent of the labor force employed in the wholesale and retail trade sub-sector and the contribution of this sub-sector to the GDP was reported, but the relationship did not correspond to the stated direction. Additionally, the association between the percent of the labor force employed in the wholesale and retail trade sub-sector and the GDP contributed by the tertiary sector and the commercial sub-sector was very significant. The relationship was positive for the GDP contributed by the commercial sub-sector and was negative for

the tertiary sector. One can conclude that changes in the labor force employed in the wholesale and retail trade sub-sector were explained by declines in the GDP contributions made by the tertiary sector and the wholesale and retail sub-sectors. It can also be concluded that wholesale and retail trade sub-sector employment was stimulated by commercial sub-sector contributions to the GDP. This negative relationship was again partially explained by the relatively weak contributions made to the GDP by the public administration and defense, and services portion of the sector. The test for institutionalization of shift parameters revealed that the percent of the GDP contributed by the wholesale and retail sub-sector during the "insurgency" period was significant. The lag structures indicated that contributions to the tertiary sector GDP were realized in the wholesale and retail trade sub-sector labor force in the fourth year while contributions to the wholesale and retail trade sub-sector GDP were realized in the respective labor force in the third year.

The analysis suggested that per capita GNP stimulated the growth of the tertiary sector as represented by the percent of the labor force employed in the tertiary sector. The GDP also stimulated the growth of this sector, but the percent of the GDP contributed to the tertiary sector had a depressing effect on the sector growth. That is, this relationship was significantly negative. Contrary to the suggestion of Preston, Moyer and Holton, the percent of the GDP contributed by the commercial and wholesale and retail

trade sub-sectors was a weak explanatory variable of changes in the commercial and wholesale and retail trade sub-sector employment. As both the employment and GDP statistics were disaggregated in order to align the respective counterparts, the explanation of the changes in the employment data which were provided by the GDP data became weaker. On balance, one can conclude that national marketing at the tertiary level did develop as measured by per capita GNP and GDP. However, the commercial sub-sector which included most of the functions associated with marketing did not develop in the same proportion as the tertiary sector. Wholesale and retail trade as the essential distributive function of marketing also did not develop in a like proportion with the entire tertiary sector.

Political Violence and National Marketing Development

The previous section endeavored to provide a summary of the extended conventional measures of marketing development in South Vietnam. These conventional measures indicated that national marketing developed at the tertiary sector level but that its development at the commercial and wholesale and retail trade sub-sector levels was less significant. With this analysis as a base, it was appropriate to inquire as to the impact of political violence on national marketing development at each level. The measure of this unique dimension of marketing development was the major objective of this study. The major research question which was structured to meet this objective was:

What was the impact of political violence on national marketing development in South Vietnam from 1955 through 1972?

The impact of political violence on both employment and national income indicators was used in the analysis of this question.

Employment Indicators

The level of employment in the tertiary sector and its sub-sectors of commerce and wholesale and retail trade was considered to be a strong indicator of the development of marketing and related activities at these levels. The impact of political violence on this development was measured as an aid in addressing the major research question.

There was a general lack of commonality in the results obtained from the association between tertiary sector and sub-sector employment and the indicators of political violence. The strength of the association between tertiary sector and sub-sector employment and political violence decreased as this sector was disaggregated. The relationship at the tertiary sector was positive and very significant, indicating that political violence had stimulated the development of the tertiary sector. The strength of the association between the commercial sub-sector employment and the indicators of political violence was positive and significant except for deaths from political violence, which was slightly negative. It appeared that political violence also stimulated the development of the commercial sub-sector but to a lesser

degree. The association between the wholesale and retail trade sub-sector employment and the indicators of political violence was significant, but the direction of the relationship was not as stated. Therefore, it can be concluded that political violence depressed the development of the wholesale and retail trade sub-sector.

The use of slope and intercept dummy variables aided in determining if the data from the three political violence time periods should be separated. Mixed results were found. There was no apparent institutionalization of shift parameters in the data. However, the strength of the explanatory variables was associated with political violence time periods, indicating structural changes in the political violence data. The political violence which stimulated the development of the tertiary sector was concentrated in the "insurgency" and "limited war" periods. In the case of the commercial sub-sector, political violence stimulated this development in the "insurgency" period and depressed it during the "limited war" period. Political violence depressed the development of the wholesale and retail trade sub-sector during the "limited war" period.

The lag structures indicated that the impact of political violence was reflected in the tertiary sector in the fourth year and in the commercial and wholesale and retail trade sub-sector labor forces during the fifth year.

These phenomena had not been previously tested; therefore, there was no basis for comparison of the results.

There was striking similarity between these results and those obtained for the national marketing development measures. National marketing development used these same employment indicators of tertiary sector and sub-sector development but used national income data as explanatory variables instead of political violence data. The next section addresses the relationship between national income indicators as measures of marketing development and the impact which political violence had on these indicators.

Sector National Income Indicators

National income as measured by sector and sub-sector contributions to the GDP was also a strong indicator of the development of marketing and related activities in the tertiary sector, the commercial sub-sector and the wholesale and retail trade sub-sector. The impact of political violence on this development was measured as an aid in addressing the major research question.

Similar to the impact of political violence on employment indicators of marketing development, the results of the association between the tertiary sector and sub-sector contributions to GDP and the indicators of political violence were mixed. The general decreasing strength of the significance from the tertiary level to the sub-sector levels between these indicators of marketing development and the indicators of political violence remained. The relationship between the percent of GDP contributed by the tertiary sector

and the indicators of political violence was positive and very significant. This indicated that political violence stimulated the development of the tertiary sector. This condition was also true but a milder level of significance at the commercial sub-sector and at a strength of significance equal to the tertiary sector for the wholesale and retail trade sub-sector. This indicated that political violence stimulated the development of the commercial and wholesale and retail trade sub-sectors.

The use of slope and intercept dummy variables to separate the political violence time periods again produced mixed results in the sector and sub-sector GDP contribution models. As in the sector employment models, there was no apparent significant institutionalization of shift parameters in the data, but there were distinctive strengths of the explanatory variables associated with particular political violence time periods. This was an indication of structural changes in the political violence data. The development of the tertiary sector was stimulated by political violence during the "pre-insurgency" time period. The political violence which stimulated the development of the commercial sub-sector was concentrated in the "pre-insurgency" time period. Conversely, the political violence which stimulated the development of the wholesale and retail trade sub-sector was concentrated in the "limited war" period.

The test for lag effects of political violence indicated that the impact of political violence was reflected in the

tertiary sector and the wholesale and retail trade sub-sector during the fifth year and in the commercial sub-sector during the seventh year.

The results obtained using national income indicators to measure the impact of political violence on marketing development differed only in that political violence appeared to stimulate the development of the wholesale and retail trade sub-sector rather than depress it. This was also the case when sector employment indicators were used as the measure of marketing development. The results obtained using national income indicators of marketing development and the impact which political violence had on this phenomena were similar to the results obtained when national marketing development was measured using national income data as the explanatory variable in lieu of political violence data. Therefore, the next section addresses the relationship between income indicators at the national level (per capita GNP and GDP) and their relationship with indicators of political violence.

Gross National Income Indicators

The significance of the association between per capita GNP and GDP and the indicators of political violence was stronger than any measures of national marketing development. Only government sanctions as a political violence variable provided a significant negative relationship in the GDP models. The impact of political violence on both the per capita GNP and GDP national income indicators was centered in the "insurgency" and "limited war" periods. The test for lag

effect indicated that the impact of political violence was reflected in per capita GNP in the fifth year and in GDP in the seventh year.

The analysis of the impact of political violence on these gross indicators of national income was similar to the results obtained when national sector income indicators were used as the explanatory variables to measure national marketing development. There appeared to be a pattern of relationships developing in which political violence had the same approximate positive and stimulating effect on the development of marketing as national income did on this development.

Political Violence and the Development of an
Infrastructure, Marketing Operations
and Marketing Middlemen

The joint U.S.-Vietnamese Post War Development Group and the Simulmatics Corporation research team concluded from their limited empirical evidence that political violence in South Vietnam retarded the development of an infrastructure. The reported data in this study suggested that the impact of political violence reduced the number and scope of activities engaged in by marketing middlemen. An objective of this study was to empirically test the impact of political violence on the development of an infrastructure, marketing operations and marketing middlemen. The following minor research question was addressed through the aid of a series of empirical tests:

What was the impact of political violence
on the development of an infrastructure to

support marketing operations and marketing middlemen in South Vietnam from 1955 through 1972?

Transportation Systems

The impact of political violence was reported by other researchers as particularly heavy on all transportation means. The results of the analysis in this study were mixed. There were very significant positive associations between the number of motor vehicles in use and armed attacks, protest demonstrations and the annual cumulative political violence events index. However, there was also a significant negative relationship between the number of motor vehicles in use and government sanctions. In the case of the association between railway passenger/kilometers and all the significant indicators of political violence, there was a very strong negative relationship. The relationship between coastwise shipping in commercial ports and the significant indicators of political violence was positive. However, domestic air passenger/kilometers and deaths from political violence reflected a positive association while government sanctions in the same model had a negative significant association.

More insight was gained into the unequal impact of political violence on transportation means by an examination of the models which tested for the homogeneity of the slopes and intercepts. The institutional effects for transportation means, except domestic air passenger/kilometers which was not reported, were mainly in the "pre-insurgency" and "insurgency" period. Also, there were significant structural

changes in which the potency of the explanatory variable was associated with a particular political violence time period. For example, the significance and direction of the association between number of motor vehicles in use and armed attacks was mildly insignificant and positive in the "limited war" period, and government sanctions in the same model was negative and significant during the same period. The strong negative significant relationship between railway passenger/kilometers and the indicators of political violence was explained by riots, deaths from political violence and the annual cumulative political violence events index, all of which were in the "insurgency" period. The explanatory variables for coastwise shipping in commercial ports were riots in the "pre-insurgency" period and government sanctions in the "insurgency" period. The lag impact of the indicators of political violence was reflected in motor vehicles in use and railway passenger/kilometers during the fifth year. The lag impact of political violence indicators for shipping in commercial ports was reflected in the first and fifth years.

The analysis suggested that political violence stimulated the development of motor vehicle use, coastwise shipping in commercial ports and domestic air service while it depressed rail service. Political violence appeared to have had its greatest stimulating effect on the number of motor vehicles in use during the "pre-insurgency" and "insurgency" periods and had a depressing effect during the "limited war" period. Political violence appeared to have depressed railway services

most dramatically during the "insurgency" period. Political violence appeared to have stimulated coastwise shipping in commercial ports during the "pre-insurgency" and "insurgency" periods.¹

The association of all four transportation means with political violence was significant, but it did not correspond to the stated direction in the case of motor vehicles in use, coastwise shipping in commercial ports and domestic air passenger/kilometers. Obviously, all transportation means did not respond to political violence in the same way. Also, there were other factors which were not included in this analysis that may explain the development of these transportation means in South Vietnam. Some of these other factors are capital, labor, management, technology, demand and marketing opportunities. A meaningful relationship may exist only when several of these factors are considered simultaneously and grouped according to their collective impact on the development of transportation means.

Communications

Communications media were thought to respond to increases in political violence by reducing their operations. The analysis of the impact of political violence on communications also produced mixed results. There was a positive and significant association between domestic air post letters

¹Dummy variable models and lag structures were not computed for domestic air passenger/kilometers due to the limited data series available for this indicator.

received and mailed and the indicators of political violence, excluding government sanctions in which the relationship was negative. Also, the association between circulation of daily newspapers and the indicators of political violence was significant and positive, except for government sanctions in which the relationship was negative. There was an insignificant association between average weekly radio broadcast hours and political violence indicators, but the insignificant political violence indicators pointed to a positive relationship.

The models which used dummy variables indicated that there were institutional effects during the "pre-insurgency" and "limited war" periods for the political violence variables in the domestic air post letters received and mailed model. There were also significant structural changes. Deaths from political violence reflected a mild insignificant effect on the dependent variable in the "pre-insurgency" period. The annual cumulative political violence events index was a strong positive predictor variable. Protest demonstrations in the "insurgency" period and government sanctions in the "limited war" period were strong significant negative explanatory variables against the dependent variable. The lag effect of political violence was reflected in domestic air post letters received and mailed, after five years.

The analysis relative to communications media indicated that the development and use of communications media were stimulated by political violence indicators, excluding

government sanctions which retarded this development and use. The strength of the impact of political violence indicators during the political violence time periods was mixed. However, the strength of the association between domestic air post letters received and mailed and political violence indicators had a tendency to be concentrated in the "pre-insurgency" and "limited war" periods during which it was negative.²

All three of the communications media showed a significant relationship with indicators of political violence. However, this relationship did not correspond to the stated direction in the case of domestic air post letters received and mailed during the "pre-insurgency" and "limited war" periods. There were other factors not considered: capital, labor, technology, management, demand and marketing opportunity. These may explain the development and use of communications media. Of course, all communications media did not respond to political violence in the same way. It may be possible to group factors which, if considered simultaneously, would explain the development of these communications media.

Banking System

A national banking system is an important element of each economy. In this study, there was generally a positive

²Dummy variable models and lag structures were not computed for circulation of daily newspapers and average weekly radio broadcast hours due to the limited data series available for these indicators.

and very significant association between the number of checks presented for clearance and the indicators of political violence both on a quarterly and annual basis. There was some shifting of the significant explanatory variables between the quarterly and annual data models. This shifting was a reflection of the different productive strengths of the data sets. However, the quarterly data model showed a stronger significant relationship between the number of checks presented for clearance and the indicators of political violence.

The models which employed dummy variables to test for the homogeneity of the slopes and intercepts indicated that strong institutional effects occurred in the political violence data during the "pre-insurgency" and "limited war" periods. Also, some structural shifts occurred in which the strength of the political violence explanatory variables was largely reflected in the "limited war" period. The lag effect of political violence was reflected in the number of checks presented for clearance during the fifth year, or in the case of quarterly data, during the first fifteen quarters.

The analysis indicated that political violence stimulated the development of a national banking system. The number of checks presented for clearance showed a significant relationship with most of the indicators of political violence, but this relationship did not correspond to the stated direction. It was possible that the national banking system was sheltered from some of the indicators of political violence in terms of a direct impact. Also, there may exist other factors which

were not included in this analysis that explain the development of a national banking system in South Vietnam. Some of these factors are: capital, labor, management, technology, institutional factors, demand and marketing opportunities. It is possible that a meaningful relationship could be constructed if several of these factors were grouped according to their collective impact on banking development.

Marketing Middlemen

The research staff of the Simulmatics Corporation, Sansom, and this study's data suggested that political violence reduced the total number of marketing middlemen and their respective volume of business. The results of this analysis were mixed. The association between small firms and most of the indicators of political violence was negative and very significant; whereas, the association between medium-sized firms and most of the indicators of political violence was positive and very significant. The association between public works firms and the indicators of political violence was equally divided between significant negative and positive indicators. The association between the number of commercial establishments and the indicators of political violence was insignificant.

The models which use dummy variables indicated that there were significant institutional effects in the political violence data during "pre-insurgency" and "limited war" periods, except for public works contractors, in which case the institutional effects were concentrated in the "limited war"

period. The pattern of positive and negative explanatory political violence variables persisted through the dummy variable models and confirmed that the most significant association between the marketing middlemen indicators and indicators of political violence was in the "limited war" period. The lag effect of political violence was reflected in marketing middlemen in the fifth year, except for public works contractors where the lag effect was reflected in the first and seventh year.

The analysis of marketing middlemen and their operations indicated that political violence depressed the growth of small business firms and stimulated the growth of medium-sized and public works contractor firms. The results indicated that a relationship did not exist between political violence and the number of commercial establishments. Political violence apparently made the greatest impact on this group of business firms during the "pre-insurgency" and "limited war" periods.

The association between marketing medium-sized firms in each group, and the indicators of political violence, was significant, but it corresponded to the stated direction only in the case of small business firms. All business firms did not respond in the same way to political violence. There were obvious factors such as: capital, labor, management, entrepreneurship, technology, demand and marketing opportunities which were not included in the analysis. These factors may explain the development of medium-sized and

public works contractor firms. A meaningful model, taking into account these factors, could no doubt be constructed.

Utilities

Public utilities in South Vietnam were considered by researchers in this area as depressed by the impact of political violence. The association between per capita electric consumption and most of the significant indicators of political violence was positive. This did not support the thesis. The strength of the significance of the association in the quarterly data models was stronger than those found in the annual data models. The use of slope and intercept dummy variables to separate the data into the political violence time periods indicated that there were significant institutional effects in the political violence data during the "pre-insurgency" and "limited war" periods. Also, structural changes were concentrated in the "limited war" periods. The lag effect of political violence was reflected in the first and fifth years in the annual data structures and in the first through the fifteenth quarters in the quarterly data structures.

The association between per capita electric energy consumption and the indicators of political violence was significant, but it did not correspond with the stated direction. There is a remote possibility that per capita electric energy consumption was sheltered from the impact of political violence. Also, there were other factors not included in this analysis which may explain the growth of per capita electric

energy consumption. Some of these factors are: capital, labor, management, government policies and regulations, technology, demand and marketing opportunities. A meaningful relationship might be constructed by grouping these factors according to their collective impact on the growth of per capita electric energy consumption.

Industrial Production

The general index of industrial production was used as a checking variable against other indicators of infrastructure development, such as utilities, which are part of this overall index.³ The significance of the association between the general production index and the indicators of political violence was weak but positive. The association was significant but it did not correspond with the stated direction. The analysis indicated that political violence had a mild stimulating effect on industrial production.

The increases in per capita electric energy consumption, which were part of the second economic sector, apparently were stimulated by political violence. Apparently, all industrial production did not respond to political violence in the same way. There are obvious factors such as: capital, labor, management, technology, demand, and marketing opportunities which were not included in this analysis. These

³Dummy variable models and lag structures were not computed for the general index of industrial production due to the limited data series available for this indicator.

variables may explain the development of industrial production, if grouped, based on their collective impact in a relevant model.

Political Violence and the Production of
Key Agricultural Commodities

An important objective of this study was to empirically test the proposition that the impact of political violence reduced the production and marketing of key agricultural commodities in South Vietnam from 1955 through 1972. Sansom and the Joint U.S.-Vietnamese Post War Development Group, among others, suggested that the frequency and intensity of political violence events reduced the output and distribution of these key commodities. Therefore, a minor research question was structured which has been subjected to several tests in this research project:

What was the impact of political violence
on the production of key agricultural
commodities in South Vietnam from 1955
through 1972?

Paddy Production

Paddy is the basic subsistence food in South Vietnam and was thought to be the most sensitive to changes in political violence. This proposition was not sustained by the analysis. In fact, many of the indicators of political violence exhibited mildly insignificant to significant positive association with paddy production. Only two political violence indicators, deaths from political violence in the OLS models and riots during the "pre-insurgency" political violence time

period in the dummy variable model, showed a significant relationship which could depress paddy production.

The dummy variable models which were employed to test for the homogeneity of the slopes and intercepts revealed significant institutional effects and structural changes in the political violence data. These findings partially confirmed the need to separate the data into three political violence time periods. The strength of the significance of the association between paddy production and political violence was mixed, but it was strongest during the "pre-insurgency" and "limited war" periods. Also, significant structural effects were evident in which the strength of the significant explanatory variables was identified with a particular time period. Riots were significant explanatory variables in the "pre-insurgency" period. Riots and armed attacks were the significant explanatory variables in the "limited war" period. The lag scheme used in this analysis indicated that the significant impact of political violence on paddy production was realized in the fifth year.

Rubber Production

Rubber is an important plantation crop and industrial export commodity in South Vietnam. The impact of political violence was considered by many writers to have depressed the production and distribution of rubber during the period of this study. The analyses of data of both annual and quarterly rubber production and political violence supported this thesis. There was a very significant inverse relationship

between rubber production and the cumulative political violence events indices and armed attacks in the OLS models. The over-all inverse association between rubber production and indicators of political violence was stronger in the quarterly than in the annual data models.

The models which used dummy variables indicated that there were strong institutional effects in the political violence data during the "pre-insurgency" and "insurgency" periods. There were also significant structural changes in which the strength of the explanatory variables was in the "pre-insurgency" and "limited war" political violence time periods. Armed attacks and government sanctions were the significant individual explanatory variables and had approximately equal strength with the cumulative political violence events indices. Again, the over-all strength of the significant association between rubber production and indicators of political violence was better in the quarterly than in the annual data models. The lag structures which were employed in this analysis indicated that the significant effect of political violence on rubber production was largely reflected in the fifth year.

Tea Production

In South Vietnam, tea is a plantation crop which is largely consumed domestically. This commodity is produced in the lower central highlands where political violence thrived over the period of this study. Sansom and the Joint U.S.-Vietnamese Post War Development Group reported that political

violence had a significant depressing effect on the production and distribution of tea. The over-all analysis of the relevant data did not support this opinion. All of the indicators of political violence, except riots during the "pre-insurgency" period, exhibited significant positive association with tea production. Riots during this political violence time period were significant and indicated that they could depress tea production. The individual political violence indicators, riots and armed attacks, were stronger predictor variables than the annual cumulative political violence events index.

The test for homogeneity of the slopes and intercepts revealed approximately equal strength during each political violence time period. However, there were significant structural changes which showed riots as the strongest predictor variable during the "pre-insurgency" and "limited war" periods. The lag schemes reported that the significant impact of political violence was reflected in tea production during the first and fifth years.

Coffee Production

Coffee is also a plantation crop in South Vietnam and is exported. This crop is produced in the central highlands region which also experienced increasing levels of political violence over the period of this study. Sansom and the Joint U.S.-Vietnamese Post War Development Group referred to this violence as having an impact on both the production and distribution of coffee. The over-all analysis of the data

did not support this view. The indicators of political violence exhibited significant positive associations with annual coffee production, except for the annual cumulative political violence events index during the "pre-insurgency" period. Riots and armed attacks were stronger explanatory variables than the annual cumulative political violence events index.

There was approximately equal homogeneity of the intercepts in each political violence time period. However, riots and armed attacks were the significant explanatory variables during the "limited war" period. The lag structure analysis indicated that the significant effect of political violence on coffee production was reflected in the fifth year.

The analyses in this study indicated that political violence stimulated the production and distribution of paddy, tea and coffee while it depressed the production and distribution of rubber. Political violence had its greatest stimulating impact on the production of paddy, tea and coffee during the "pre-insurgency" and "limited war" periods. The depressing effect of political violence on rubber production and distribution was mixed but appeared to be strongest during the "pre-insurgency" and "limited war" political violence time periods. The significant positive and negative lag effect of political violence on all four agricultural commodities was concentrated in the fifth year.

A significant relationship was found to exist for all four key agricultural commodities, but it did not correspond to the stated direction in the case of paddy, tea and coffee.

In this study, all agricultural commodities were not affected in the same way by political violence. Other factors may exist to explain the production and distribution of paddy, tea and coffee in South Vietnam. The magnitude of possible factors, such as weather, new plant varieties, capital, labor, management, transportation, communications, demand and other marketing opportunities, suggests that meaningful relationships may exist when several of these factors are considered simultaneously.

Political Violence and Patterns of Consumption

Dacy, McElroy and other researchers have stated, based largely on observation, that political violence in South Vietnam caused radical changes in the traditional consumption patterns. They contended that there were radical changes in both the volume and composition of many major consumable items in response to political violence. Therefore, the following minor research question was subjected to empirical analysis:

What was the impact of political violence
on the patterns of consumption in South
Vietnam from 1955 through 1972?

This research question is neutral, since it does not presuppose that political violence depressed, stimulated or altered the composition of consumption patterns.

Basic Foods

The consumption of basic foods on a per capita basis is expected to remain approximately the same unless these items are not available due to political violence, or if people are

living below some minimum subsistence level. The latter was not the case in South Vietnam. This study found slight increases in basic food consumption when the level of income increased.

In the OLS models, the association between basic food consumption and the indicators of political violence was very significant with one exception. Per capita rice consumption was insignificant. The direction of the relationship was positive for rice and fish consumption but negative for pork consumption. Riots and the cumulative political violence events index were the variables which showed a negative relationship and may have depress per capita pork consumption.

The models which employed dummy variables to separate the political violence time periods showed mixed results. Shift parameters were detected which indicated that the political violence data had become institutionalized largely in the "pre-insurgency" and "limited war" periods. Also, the strength of the explanatory variables was centered in the same periods. The lag effect of political violence was reflected in per capita rice consumption during the first and fifth years. Also, the lag effects of political violence were reflected in per capita fish and pork consumption during the fifth year.

The analysis indicated that political violence depressed per capita rice consumption during the "pre-insurgency" political violence time period and had an insignificant impact during the following two political violence time periods.

Political violence apparently stimulated per capita fish consumption and significantly depressed per capita pork consumption, particularly during the "limited war" period.

In this study, the consumption of all basic foods was not affected by political violence in the same way. There are possibly other existing factors which explain changes in the consumption patterns of these basic foods. The magnitude of such factors as capital, labor, management, government policies, technology and marketing opportunities suggests that a meaningful relationship might only exist when they are considered simultaneously.

There are a few specific factors which may have influenced basic foods consumption. A close examination of the political violence data seems to indicate that the level of political violence was low relative to other periods during the important rice planting seasons. Rice shifted from a key export to a key import crop after 1964. In the case of fish consumption, a large portion of the fishing fleet was motorized beginning in 1964. These factors were not tested in the analysis and care should be exercised in forming any conclusions based on these events.

Luxury Foods

Sugar and beverages are considered luxury foods in South Vietnam. These food items are also considered to be strong indicators of over-all economic development in the less-developed countries. There was a very strong significant

positive relationship between luxury foods and the indicators of political violence.

In the models which used dummy variables to separate the political violence time periods, the political violence data became institutionalized generally in the "pre-insurgency" and "limited war" time periods. However, the strength of the explanatory political violence indicators was centered in the "insurgency" and "limited war" periods. The lag structures indicated that the lag effect of political violence was reflected in per capita sugar and beverage consumption during the fifth year.

The analysis indicated that political violence stimulated the consumption of luxury foods particularly in the "insurgency" and "limited war" political violence time periods. There are undoubtedly other factors not considered in these models which could also explain the consumption of luxury foods.

Industrial Goods

Industrial goods form an important capital base in every developing economy. The consumption of these goods then becomes an important indicator of development in the less-developed countries. There was a very strong significant association between industrial goods and the indicators of political violence. This relationship was positive except in the case of government sanctions in the per capita selected petroleum consumption models.

There were shift parameters which indicated that the political violence data had become institutionalized generally during the "pre-insurgency" and "insurgency" time periods. However, the strength of the individual political violence explanatory variables was centered in the "limited war" period. The lag effect of political violence was reflected in industrial goods consumption in the first and fifth years.

The analysis indicated that political violence stimulated the consumption of industrial goods, particularly during the "limited war" period. Other factors not included in this study, such as capital, labor, management, technology and marketing opportunities, might also explain the consumption of industrial goods.

Soft Goods

The consumption of soft goods, which are sometimes known as nonessential goods, was frequently viewed in South Vietnam as affluence in consumption. The association between per capita domestic fabric consumption and the indicators of political violence was significant. However, deaths from political violence showed a negative significant relationship which could depress per capita domestic fabric consumption. The association between per capita paper products consumption and the indicators of political violence was positive and significant. The association between per capita pharmaceutical consumption and the indicators of political

violence was insignificant. There was, however, some evidence of a negative relationship beginning to form.

In the models which used dummy variables, there were shift parameters which indicated that the political violence data had become institutionalized in the per capita domestic fabric consumption model during the "limited war" period. In the per capita pharmaceutical consumption model the institutionalization appeared in the "pre-insurgency" and "limited war" periods. The per capita paper products consumption model had a relatively homogeneous intercept structure. The explanatory variables in all three models were concentrated in the "limited war" period, indicating structural changes in the strengths of the variables. The lag effect of political violence was reflected in soft goods consumption in the first and fifth years.

The analysis indicated that political violence stimulated the consumption of domestic fabrics and paper products. The major impact of political violence on this consumption was during the "limited war" political violence time period. There was no significant relationship between per capita pharmaceutical consumption and the indicators of political violence.

In this study, all soft goods did not respond in the same way to political violence. There are other factors, such as capital, labor, management, technology and marketing opportunities, which were not included in this analysis. These factors may explain the consumption of pharmaceuticals.

Implied Research Questions

A major research question and three minor research questions were structured based on the literature to guide this study. Pertinent questions were selected for empirical testing in the study. Through additional research and preliminary analyses of these questions, two implied research questions were developed. These two questions were closely related to the methodology of the analyses employed and were stated to guide the study.

The first implied question, "What is the rationale for separating the data in the study into three separate time periods of "pre-insurgency," "insurgency" and "limited war?" was answered throughout the study as the findings relative to each research question were presented and the conclusions stated.

The value derived from separating the data into three political violence time periods was reflected in the improvements in the over-all precision of the analysis which was achieved. The tests for the homogeneity of the slopes and intercepts clearly showed that, the data should be divided into the three political violence time periods. This technique also allowed for the isolation of the impact of political violence in a particular time period rather than spreading it over the entire development period. The net result was an improvement in the significance of the explanatory variables. Clearly, there were three discernible political

violence time periods which approximated those tested in this research project.

The second implied question, "What is the saturation or lag effect of the indicators of political violence on the marketing development, marketing operations, key agricultural commodity production and consumption pattern variables.", was answered throughout the analysis of each research question and in the conclusions.

It was evident, in the preliminary analysis of the impact of political violence on marketing development, that the effect could not be immediate. Instead, the impact of political violence had a lagged or saturation effect. Therefore, the Almon lag structure technique was used to measure both the length or duration of the lagged periods and the significance of the lag structures. It measured the significance of the association between the dependent marketing development data and the predictive political violence data in each lag structure. As a matter of convenience, the normalized lag coefficients for the "best fit" lag structures were plotted in charts which picture the relationships found in each case. The lagged periods which were significant in the study range from two to seven years.

Political Violence Indicators

The five individual basic political violence indicators and the cumulative political violence events index selected for use in this study represented a wide range of political violence and were expected to have varying potency as

explanatory variables. The potency of political violence and related explanatory variables in other studies was discussed in Chapter III.

This study developed a useful group of conclusions relating to the effectiveness or potency of political violence indicators. The data derived from the use of political violence variables in this study was particularly valuable on several accounts. The mix of political violence variables was, perhaps, unique to this study. The use of dummy political violence variables to separate the data into political violence time periods was believed to have originated in this study. The use of political violence variables in lag structures to test the length of the lagged period and the significance of the lagged association between variables was also unique and identified with this study. The development and use of a cumulative political violence events index and its testing in an empirical study, although not unique, was a specific application of previously used techniques.

Several tables were constructed in which the results of the use of the political violence indicators in this study were summarized. The first table showed the political violence indicators used in the study, the number of times in the 36 OLS multiple regression models that these indicators were significant at the 95 percent confidence level, and the percent of times that this indicator was significant.⁴

⁴See Table 30.

TABLE 30
EXPLANATORY POLITICAL VIOLENCE INDICATORS
SIGNIFICANT AT 95 PERCENT CONFIDENCE
LEVEL IN ANNUAL DATA MODELS
N=36^a

Independent Variables (Rank Order)	Number of ^a Times Significant	Percent of ^c Times Significant
Armed Attacks (Code 504)	20	55.6
Protest Demonstrations (Code 506)	13	36.1
Government Sanctions (Code 519)	12	33.4
Riots (Code 501)	10	27.8
Deaths from Political Violence (Code 502)	9	25.0
Cumulative Political Violence Events Index (Code ACPVIND)	23	63.9

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

^aThere are 36 multiple regression models which employ the cumulative political violence events index as the independent variable and also 36 multiple regression models which employ one or more of the individual political violence variables as independent variables.

TABLE 30--Continued

^bThe variable is significant at the 95 percent confidence level in the model in which it appears.

^cThe percentages do not add to 100 because a variable may be significant in several models.

Armed attacks was the most potent individual basic political violence variable in all of the annual data models. The cumulative political violence events index was significant a larger number of times than any other political violence indicator. Deaths from political violence had a lower percentage of times in which it was significant than other writers have suggested.⁵ The weak performance of the deaths from political violence variable in this study may have been caused by the backward step-wise regression technique used. Simple multicollinearity frequently existed between armed attacks and deaths from political violence, in which case the variable with the lowest level of significant was eliminated in the backward step-wise regression sorting-out process.

The strength of the dummy political violence variables used in the models which tested for the homogeneity of the slopes and intercepts was also summarized in a table to determine if the potency of the variables had carried through from the OLS annual data models.⁶ The results indicated that they did not. In the dummy variable models, government sanctions was significant more times than any other individual political violence explanatory variable. Riots was the second most significant explanatory variable. Very surprisingly, the cumulative political violence events

⁵Several writers found that the most potent political indicators are deaths from political violence and armed attacks. See Chapter III of this study for a discussion of these findings.

⁶See Table 31.

TABLE 31
EXPLANATORY POLITICAL VIOLENCE INDICATORS
SIGNIFICANT AT 95 PERCENT CONFIDENCE
LEVEL IN ANNUAL DUMMY
VARIABLE MODELS
N=32^a

Independent Variables (Rank Order)	Number of ^b Times Significant	Percent of ^c Times Significant
Government Sanctions (Code 519)	14	43.8
Riots (Code 501)	12	37.5
Armed Attacks (Code 504)	10	31.3
Protest Demonstrations (Code 506)	8	25.0
Deaths from Political Violence (Code 502)	2	6.3
Cumulative Political Violence Events Index (Code CPVIND)	8	25.0

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

^aThere are 32 multiple regression models which employ the cumulative political violence events index as the

TABLE 31--Continued

independent variable and also 32 multiple regression models which employ one or more of the individual political violence variables as independent variables.

^bThe variable is significant at the 95 percent confidence level in the model in which it appears.

^cThe percentages do not add to 100 because a variable may be significant in several models.

index declined in level of significance over the annual data models to only 25 percent of the times in which it was significant. Armed attacks and deaths from political violence were significant 31.3 percent and 6.3 percent of the times respectively.

Next, the explanatory political violence variables were sorted by research questions in this study. This effort was made in order to align the political violence indicators with each respective research question.⁷ The results differed considerably from those obtained regarding the collective use of the political violence indicators. In the marketing development models, deaths from political violence was the most potent explanatory variable. The most potent explanatory variables in the infrastructure and related models were armed attacks and government sanctions. The key agricultural commodities models reflected armed attacks as the most potent variable. The patterns of consumption models showed armed attacks to be the most potent variable. Also, the cumulative political violence events index improved in the separate models over its previous performance. This separation of the political violence indicators into groups based on the research questions of the study supported previously reported

⁷See Table 32.

TABLE 32
EXPLANATORY POLITICAL VIOLENCE INDICATORS SIGNIFICANT AT 95 PERCENT CONFIDENCE LEVEL
IN ANNUAL DATA MODELS BY DEPENDENT VARIABLE SERIES

N=36^a

Independent Variables (Code Order)	Marketing Development (100 Series) ^d N=8		Infrastructure, Marketing Operations and Marketing Middlemen (200 Series) N=14		Key Agriculture Commodity Production (300 Series) N=4		Patterns of Consumption (400 Series) N=10	
	Number of ^b Times Significant	Percent of ^c Times Significant	Number of Times Significant	Percent of Times Significant	Number of Times Significant	Percent of Times Significant	Number of Times Significant	Percent of Times Significant
Riots (Code 501)	2	25.0	2	14.3	2	50.0	4	40.0
Deaths from Political Violence (Code 502)	4	50.0	3	21.4	1	25.0	1	10.0
Armed Attacks (Code 504)	3	37.5	7	50.0	4	100.0	6	60.0
Protest Demonstrations (Code 506)	3	37.5	6	42.9	1	25.0	3	30.0

TABLE 32--Continued

Independent Variables (Code Order)	Marketing Development (100 Series) ^d N=8		Infrastructure, Marketing Operations and Marketing Middlemen (200 Series) N=14		Key Agriculture Commodity Production (300 Series) N=4		Patterns of Consumption (400 Series) N=10	
	Number of ^b Times Significant	Percent of ^c Times Significant	Number of Times Significant	Percent of Times Significant	Number of Times Significant	Percent of Times Significant	Number of Times Significant	Percent of Times Significant
Government Sanctions (Code 519)	2	25.0	7	50.0	0	0	3	30.0
Cumulative Political Violence Events Index (Code CPVIND)	8	100.0	8	57.2	1	25.0	6	60.0

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

^aThere are 36 multiple regression models which employ the cumulative political violence events index as the independent variable and also 36 multiple regression models which employ one or more of the individual political violence variables as independent variables.

^bThe variable is significant at the 95 percent confidence level in the model in which it appears.

^cThe percentages do not add to 100 because a variable may be significant in several models.

^dSeries numbers correspond to dependent variables used with each research question.

results that armed attacks and deaths from political violence were the most potent political violence explanatory variable.⁸

The explanatory political violence indicators were also organized by the three political violence time periods.⁹ The results showed the strength of the political violence variables during the different political violence time periods. The explanatory variables had a tendency to gravitate to the "insurgency" and "limited war" time periods during which the frequency and intensity of political violence increased. However, the shifting in the number of times in which an explanatory variable was significant in a particular time period was an important finding of this study. For example, riots and armed attacks were the most potent explanatory variables in the "pre-insurgency" time period. There was no distinguishable pattern of potency among the individual political violence variables during the "insurgency" time period. During the "limited war" time period, government sanctions, armed attacks, and riots are the most potent explanatory variables. The potency of the cumulative political violence events index improved with each successive time period from "pre-insurgency" through "limited war."

⁸Flanigan, Fogelman, Tanter, Rummel, Hoole, and the Feierabends have all suggested that armed attacks and deaths from political violence are the strongest indicators of political violence. Also see Chapters II and III.

⁹See Table 33.

TABLE 33
EXPLANATORY POLITICAL VIOLENCE INDICATORS
SIGNIFICANT AT 95 PERCENT CONFIDENCE
LEVEL IN DUMMY VARIABLE MODELS BY
POLITICAL VIOLENCE TIME PERIOD
N=32^a

Independent Variables (Code Order)	Political Violence Time Periods		
	Pre-insurgency 1955-1960	Insurgency 1961-1964	Limited War 1965-1972
Riots (Code 501)	4	2	6
Deaths from Political Violence (Code 502)	0	1	1
Armed Attacks (Code 504)	3	1	6
Protest Demonstrations (Code 506)	2	2	4
Government Sanctions (Code 519)	1	2	11
Cumulative Political Violence Events Index (Code CPVIND)	2	5	1
Total	12	13	29
Percent of Significant Variables	22.2	24.1	33.7

TABLE 33--Continued

SOURCE: Dependent and independent variables data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer system.

^aThere are 32 multiple regression models which employ the cumulative political violence events index as the independent variable and also 32 multiple regression models which employ one or more of the individual political violence variables as independent variables.

Implications of the Research

The implications of this research are divided into theoretical and practical contributions of the study. This is not to say that good theory is not practical or that good practices should not be based on good theory. This unique study has produced contributions to the general body of marketing development and political violence theory. It has also produced several important practical contributions which ought be tested in other situations before they can be accepted as having universal application.

Theoretical Implications

There was very little theory to guide this research of the impact of political violence on marketing development. In the closely associated area of political stability and economic development, there are writers who believe that political stability is a pre-condition for economic development. Other writers believe that economic development leads to political stability. A few writers believe that system legitimacy can either reduce or expand economic development.¹⁰ Most of these studies are based on cross-polity analysis of many countries; therefore, their applicability in this study of one country was limited.

On balance, the theory that political stability is a pre-condition for economic development, or that economic development leads to political stability, was not confirmed

¹⁰The specific writers who held these views were cited in Chapters II and III.

by this study. Likewise, the contention that system legitimacy was linked to economic development was also not determined in this study. However, it should be noted that an analysis of the association between political instability and economic development was not a purpose of this research. This comparison was made only because of the scant theory available relative to marketing development and political violence.

The results of this study were considerably mixed; however, trends were discernible from the analysis. The study indicated that political violence did not have a devastating impact on marketing and related developments in South Vietnam. The general trends in the study indicated that a mild level of political violence during the "pre-insurgency" period stimulated marketing development. The median level of political violence experienced in the "insurgency" period continued to stimulate marketing but at a milder rate. Only during the "limited war" period was marketing development depressed by the high level of political violence.

The results of the analysis of the impact of political violence on the development of an infrastructure, and related systems which supported marketing operations, were not as suggested by the literature. Political violence generally stimulated infrastructure development in all of the political violence time periods with a few exceptions. The limited depressing effects on the infrastructure were concentrated

in the "limited war" period which experienced a high level of political violence.

The impact of political violence on agriculture production was not as stated in the literature. The insignificant association between paddy production and political violence was a key finding of this study. The depressing effect of political violence on rubber production was concentrated in the "pre-insurgency" and "limited war" periods. This, within itself, is contrary to the literature.

The impact of political violence on consumption patterns was interesting, since largely stimulated rather than depressed the consumption of most items. Contrary to the speculations contained in the literature, there was an insignificant relationship between political violence and the consumption of three key soft goods.

The results of this study indicate that the potency of political violence variables were different from that reported in the literature. Deaths from political violence and armed attacks as political violence variables demonstrated their strength as the most potent explanatory variables only when they were associated with specific research questions. These variables appeared to have limitations as general political violence explanatory variables. This finding was an important contribution to the theory concerning the use of political violence explanatory variables.

Another important theoretical finding of this study was that explanatory variables changed in potency and varied

among the political violence time periods. It was found that political violence indicators were required to be associated with a particular political violence time period in order to maximize their significance.

Finally, this study indicated that the lagged effects of political violence on marketing development and related activities were measurable both with respect to lagged period and the significance of the association. The lagged period in this study ranged from two to seven years and the level of significance ranged from insignificant to very significant.

Practical Implications

It was shown in this study how sector and sub-sector employment and national income statistics were used to measure the development of marketing at three levels. More importantly, the necessity to include the political violence dimension in marketing development studies in countries experiencing internal political violence was demonstrated.

The techniques for separating the data of a country into political violence time periods and the importance thereof were demonstrated in this study. Methods for organizing and interpreting the results of these techniques were presented in this study.

The measurement of the duration and significance of the lagged effect of political violence on national marketing development and related activities was demonstrated in this study. The selection of only the "best fit" model from the

OLS regression analysis was an important criterion for lagged analysis of political violence indicators.

The most potent political violence explanatory variables in the long term development period and the shorter political violence time periods were identified. In this study, the use of a non-weighted political violence index as a tool for developing the first approximation of the impact of political violence in single polity analysis was demonstrated.

The results of the testing of marketing development and related indicators should prove very useful to further research in this area. These tests provide researchers with an inventory of indicators which are worthy of evaluation and also a notation of the indicators which should be ignored.

An over-all framework of analysis was developed in this study useful to analysis of the impact of political violence on national marketing development and related activities in less-developed countries. The direct transference of the findings of this study to studies of other countries and situations must be done very carefully. Full realization that future applications may be limited because each country and each political violence situation presents a unique set of circumstances.

Recommendations

The general finding of this study, that political violence did not depress marketing development, opens up a new dimension for study in this area. The first task for any extended study in this area should be to test the methodology

of this study in studying other countries. These countries should be in the less-developed economic category and located in Southeast Asia in order to have comparability with this study. The time frame of such future studies should correspond as closely as possible with that of this study.

Studies of marketing development in other less-developed countries, where modeled after this research, should capitalize on findings of this research by using the marketing development indicators which herein demonstrated the greatest promise. Of course, the most potent political violence explanatory variables should be concentrated upon in order to conserve resources.

The use of political violence time periods is recommended where the literature suggests their use and where they can be confirmed in the behavior of political violence indicators. This is an effective tool if the above conditions can be satisfied.

Also, the use of lag techniques to measure the duration and significance of lagged effects of political violence on marketing development must be approached with caution. This technique should be used only when there is a very significant relationship for which there is a suspected corresponding significant lag structure.

Studies of other analagous countries or regions would add additional information to this previously unexplored aspect of marketing development.

APPENDIX A

ESTIMATE OF THE LABOR FORCE IN SOUTH VIETNAM

1955 THROUGH 1972

ESTIMATE OF THE LABOR FORCE IN SOUTH VIETNAM
1955 THROUGH 1972

The estimate of the labor force in South Vietnam from 1955 through 1972 was based upon reported employment statistics to the maximum extent possible. There were four complete employment censuses conducted in 1955, 1957, 1960 and 1966 by the Vietnamese Department of Labor and the National Institute of Statistics. Partial employment surveys were conducted for several intervening years. Complete employment data were available in the primary economic sector for fishing, forestry and plantations. However, farming and animal husbandry employment data in this sector were derived. This procedure is commonly used to develop primary sector employment data concerning most less-developed countries. In the secondary economic sector, labor force data were available for construction, manufacturing and utilities. In the tertiary economic sector, complete employment data were available for public administration and defense. Some employment data were available for transportation, communications, services, banking and finance, and wholesale and retail trade.

The missing data points were constructed from employment projections which were based in most cases on the outputs of the corresponding economic sector or sub-sector.

Each of these projections are discussed by economic sector. The total national labor force data was reported by the Vietnamese Department of Labor or was based upon labor participation rates suggested by the United Nations.¹

Primary Sector

The number of persons working in the fishing industry during the years 1962 through 1972 was reported in the Vietnam Statistical Yearbook series 1964 through 1972. The USOM to South Vietnam conducted an employment survey of Vietnamese working in the fishing industry in 1961, and reported these data in a pamphlet. The number of persons working in the fishing industry for the years 1955 through 1960 was estimated based on the number of fishing boats reported and the catch each year. The data for these two factors are contained in the Vietnam Statistical Yearbook series 1954 through 1962.

The number of forestry workers was reported in the Vietnam Statistical Yearbook series for the years 1960 through 1972. The number of workers for the years 1955 through 1959 was estimated based upon the timber harvest for those years contained in the Vietnam Statistical Yearbook series for these years.

The number of plantation workers was based on reported statistics in the Vietnam Statistical Yearbook series for the years 1955, 1957, 1959, 1961 and 1963 through 1972. The

¹United Nations, Economic Survey of Asia and the Middle East, 1973 Bangkok: United Nations Economic Commission for Asia and the Far East, (1974) Vol. XXIV, No. 4, p. 17, Tables 1, 2, 3.

missing data points were estimated from plantation crop production based on rubber, tea, coffee and mixed products. Separate employment surveys conducted of plantations with 500 hectars or larger cultivation areas during the intermittent years were also used to estimate the number of plantation workers.

Agricultural workers was a derived figure except for the years when complete employment censuses were conducted.

Secondary Sector

In the secondary sector, employment figures for construction workers were reported in the Vietnam Statistical Yearbook series for 1955, 1957, and 1960 through 1972. Construction workers for the missing years in this series were estimated based on the constructed area reported in the Vietnam Statistical Yearbook series for 1954 through 1960. Facts on this series were also supported by the United States Embassy which reported the number of construction workers in South Vietnam employed by U. S. contractor firms during the period 1966 through 1972.

The number of manufacturing workers was based on reported statistics in the Vietnam Statistical Yearbook series for the years 1955, 1957, 1959 and 1960 through 1972. The missing data points were based on the production of key manufactured products during these years.

The number of mining and quarrying workers was reported for the years 1955, 1957, 1959 and 1960 through 1972 in the Vietnam Statistical Yearbook series. The missing employment

data was estimated from the production of mining and quarrying products during these years as reported in the Vietnam Statistical Yearbook series for 1954 through 1960.

The number of utility workers was based on the reported work forces for all utilities. The reports were for the years 1955, 1957, 1959 and 1960 through 1972 in the Vietnam Statistical Yearbook series. The missing employment data were estimated from electrical energy production which comprised the major portion of all utility workers.

Tertiary Sector

The number of wholesale and retail trade workers was reported in the Vietnam Statistical Yearbook series for the years 1955, 1957, 1960, 1962 and 1966. The missing data points were estimated from the number of business licenses and the contribution of this sub-sector to the GDP.

The number of employees of banks, financial institutions and insurance companies was reported in the Vietnam Statistical Yearbook series for the years 1955, 1957, 1959 and 1960 through 1972. The missing employment data were based on reports of the U. S. Agency for International Development and the Vietnam National Bank for the years 1961 through 1972.

The number of real estate workers was reported for 1955, 1957, 1959, 1961, 1963 and 1966 in the Vietnam Statistical Yearbook series for these years. The missing data points were estimated based upon available rental apartments for these years.

The number of automotive transport workers was reported in the Vietnam Statistical Yearbook for the years 1955, 1957, 1959, 1962 and 1966. The intermittent years were estimated based on a factor of workers per motor vehicle in use. These data were classified by type of motor vehicle with a different factor for each type. Railway employees were reported in the Vietnam Statistical Yearbook series for all years 1955 through 1972. Air transport workers were reported for the years 1963 through 1972 in the Vietnam Statistical Yearbook series for these years. Estimates of air transport workers for the years 1955 through 1962 were based on freight ton/kilometers and passenger arrivals and departures statistics. Ship crew workers were based on the number of commercial vessels registered and the average number of workers per vessel.

The number of public administration workers was reported in the Vietnam Statistical Yearbook series for 1955, 1957, 1959 and 1960 through 1972. The data concerning the intermittent years were estimated from the reported years and the Vietnam national budget which is also reported in the Vietnam Statistical Yearbook series for the intermittent years. The number of defense workers was based on U. S. Defense Department documentation of the RVNAF plus estimates of the NFLSVN forces. These data were confirmed by U. S. Congressional committee reports.

Domestic service workers were reported for the years 1955, 1957, 1960 and 1966. The remaining years were

estimated based on factors applied for domestic servants employed in the households of indigenous Vietnamese as estimated by the Vietnamese Department of Labor and estimates of the number of domestic servants employed by United States and third country nationals.

Private professional service workers, such as medical, legal, accounting, data processing and others, were reported in the Vietnam Statistical Yearbook series in most cases from 1959 through 1972. Estimates were made for the missing years by the author based on the total population by years.

Telecommunications workers were reported in the Vietnam Statistical Yearbook series for the years 1955, 1957, 1959, 1960 and 1966. The number of workers in this industry was estimated for the missing years based on the volume of telecommunications service provided which was also reported in the Vietnam Statistical Yearbook series for the intermittent years.

Although these estimates may be less than precise in terms of survey information frequently available in market economies, they are superior for a less-developed country during the time frame 1955 through 1972. These data in this appendix are based in most cases on reported data; the creditability of such data may be superior to survey data. Because national employment data is an aggregate measure, which is used with other aggregate measures of national income, marketing development and political violence, it is appropriate for the application which is made in this study.

TABLE 34
ESTIMATE OF EMPLOYMENT IN THE PRIMARY ECONOMIC SECTOR
OF SOUTH VIETNAM

(000)

Year	Agriculture	Fishing	Forestry	Plantations	Total	Labor Force	Percent of Labor Force
1955	3,970.6	132.5	4.0	41.6	4,148.7	4,827	85.9
1956	4,026.6	104.0	4.5	48.1	4,183.2	4,946	84.5
1957	4,244.1	104.0	5.0	51.6	4,404.7	5,220	84.4
1958	4,097.7	146.7	5.0	50.2	4,299.6	5,170	83.1
1959	4,369.8	150.4	5.5	55.2	4,580.9	5,516	83.1
1960	4,414.4	184.9	5.6	56.8	4,661.7	5,629	82.8
1961	4,456.4	202.6	5.5	60.0	4,724.5	5,797	81.5
1962	4,226.0	199.5	5.1	57.2	4,487.8	5,710	78.6
1963	4,014.1	243.4	6.4	57.8	4,321.7	5,653	76.4
1964	3,912.2	245.5	5.3	60.0	4,223.0	5,744	73.5
1965	3,998.0	243.5	5.6	58.6	4,305.7	6,009	71.7
1966	3,774.0	253.8	4.6	46.9	4,079.3	6,045	67.5
1967	4,123.6	270.4	3.6	41.1	4,438.7	6,502	68.1
1968	3,939.0	272.3	5.0	37.0	4,252.3	6,503	65.4
1969	3,981.1	277.1	8.1	33.8	4,300.1	6,617	65.0
1970	4,115.1	317.4	7.1	39.1	4,478.7	6,933	64.6
1971	4,565.2	335.7	11.5	43.3	4,955.7	7,483	66.3
1972	4,797.0	342.8	11.6	30.2	5,181.6	7,685	67.4

SOURCE: See Appendix A.

TABLE 35
ESTIMATE OF EMPLOYMENT IN THE SECONDARY ECONOMIC
SECTOR OF SOUTH VIETNAM
(000)

Year	Construction	Manufacturing	Mining and Quarrying	Utilities	Total	Labor Force	Percent of Labor Force
1955	22.2	100.0	.7	1.6	124.5	4,827	2.6
1956	18.6	110.0	1.5	1.7	131.8	4,946	2.7
1957	14.0	112.0	.9	1.8	128.7	5,220	2.5
1958	63.9	112.5	1.2	2.0	179.6	5,170	3.5
1959	66.0	113.0	1.0	2.3	182.3	5,516	3.3
1960	50.0	113.9	1.2	2.4	167.5	5,629	3.0
1961	43.7	114.0	1.3	2.3	161.3	5,797	2.8
1962	52.0	115.0	1.1	2.5	170.6	5,710	3.0
1963	76.7	116.0	1.4	2.8	196.9	5,653	3.5
1964	83.6	114.0	1.1	2.8	201.5	5,744	3.5
1965	92.6	137.5	1.2	3.5	234.8	6,009	3.9
1966	130.6	149.1	.8	4.0	284.5	6,045	4.7
1967	138.5	165.5	.9	4.7	309.6	6,502	4.8
1968	98.9	152.0	1.4	5.0	255.3	6,503	3.9
1969	101.8	187.9	1.7	6.2	297.6	6,617	4.5
1970	139.1	211.7	2.7	7.3	360.8	6,933	5.2
1971	133.9	216.6	3.0	8.0	361.5	7,483	4.8
1972	106.4	203.1	2.9	8.9	321.3	7,685	4.2

SOURCE: See Appendix A.

TABLE 36
ESTIMATE OF EMPLOYMENT IN THE TERTIARY ECONOMIC SECTOR OF SOUTH VIETNAM
(000)

Year	Commercial Sub-Sector						Transportation	Public Administration and Defense	Services	Sector Total	Labor Force	Percent of Labor force (Code PLFTS101)
	Wholesale and Retail Trade	Percent of Labor Force Devoted to Wholesale and Retail Trade (Code PLWRT107)	Banking, Finance and Insurance	Real Estate	Commercial Sub-Sector Total	Percent of Labor Force Devoted to the Commercial Sub-Sector (Code PLFCS105)						
1955	90.4	1.9	3.2	.4	94.0	1.9	57.2	243.1	139.5	553.8	4,628	11.5
1956	99.4	2.0	2.9	.4	102.7	2.1	69.9	257.5	160.9	631.0	5,120	12.8
1957	91.3	1.8	3.0	.2	96.5	1.8	74.8	353.1	162.2	686.6	5,170	13.1
1958	118.6	2.3	3.4	.7	122.7	2.4	79.7	364.7	126.7	693.8	5,516	13.4
1959	129.2	2.3	3.9	.8	133.9	2.4	86.4	393.6	138.9	752.8	5,629	13.6
1960	140.6	2.5	4.6	.9	146.1	2.6	90.9	419.9	142.9	799.8	5,797	14.2
1961	140.7	2.4	5.0	.9	146.6	2.5	99.3	515.0	147.2	908.1	5,710	15.2
1962	128.2	2.2	5.1	.9	134.2	2.4	107.3	675.6	134.5	1,051.6	5,653	18.4
1963	143.4	2.5	5.0	.9	147.3	2.6	109.1	738.9	139.1	1,134.4	5,744	20.1
1964	136.3	2.4	3.3	.4	140.0	2.4	100.1	922.4	156.6	1,468.5	6,009	21.4
1965	128.4	2.1	3.7	.3	132.4	2.2	105.2	922.4	164.4	1,581.2	6,035	21.8
1966	130.6	2.2	2.8	.3	133.7	2.2	123.2	1,066.5	218.9	1,753.1	6,502	20.0
1967	129.9	2.0	3.3	.3	133.5	2.1	148.0	1,205.4	260.2	1,848.4	6,502	20.5
1968	117.5	1.8	3.2	.1	120.8	1.9	169.1	1,426.8	292.6	2,019.5	6,611	20.5
1969	126.5	1.9	4.1	.2	130.8	2.0	215.4	1,456.1	282.6	2,094.3	6,743	20.5
1970	153.9	2.2	5.8	.4	160.1	2.3	191.8	1,556.1	256.1	2,103.8	7,683	28.4
1971	152.3	2.0	7.5	.4	160.2	2.1	180.6	1,630.2	215.1	2,115.1	7,683	28.4
1972	148.4	1.9	7.4	.4	156.2	2.0	180.6	1,630.2	215.1	2,115.1	7,683	28.4

SOURCE: See Appendix A.

APPENDIX B

THE ECONOMIC DIMENSIONS OF THE ALLIED SECTOR
IN SOUTH VIETNAM 1964 THROUGH 1972

THE ECONOMIC DIMENSIONS OF THE ALLIED SECTOR
IN SOUTH VIETNAM 1964 THROUGH 1972

Background

The existence of an Allied economic sector in South Vietnam became evident early in 1964. The major portion of this sector is attributable to the United States in two ways: first, the presence of a large number of United States military personnel and the support which their presence required; second, the unprecedented injection of massive United States economic aid and assistance into the economy of South Vietnam. Several writers and agencies have commented upon the establishment of an Allied economic sector in South Vietnam and the impact which it had on the economy and the social structure of the country. One author points to this sector as a factor which "completely transformed the economic and social structure of Vietnam."¹ He further calls this a sector which was created by the war as the result of domestic expenditures of United States defense funds in South Vietnam.² The Republic of Vietnam Bureau of National Statistics

¹U. S. Department of State, United States Agency for International Development, Postwar Planning Group Report (Saigon: United States Agency for International Development-Vietnam, 1968), Part II, p. 7.

²Ibid., p. 8.

made reference to workers employed in the "Allied Service Sector."³ The Vietnam National Bank also made references to a major "Foreign Sector" comprised of goods and services.⁴ The United States Agency for International Development-Vietnam maintained statistics from 1966 through 1972 on "U.S. Sector Employment."⁵

Several attempts have been made by other researchers to analyze the Allied sector in South Vietnam. Most analyses have been hampered by a paucity of timely data, resulting in the analysis covering only one or two years. Most analyses of the Allied sector attacked the problem in terms of the effects on the economy of South Vietnam in the event of Allied troop withdrawals. One broad approach examined shifts in employment in the Allied sector comparing 1965 with 1968.⁶ Another author examined the impact of United States military expenditures, piaster purchases and economic aid for the years 1964 through 1970. This latter effort resulted in a

³Republic of Vietnam, Vietnam Statistical Yearbook, 1972 (Saigon: National Institute of Statistics, 1973), p. 292.

⁴Republic of Vietnam, Annual Report, National Bank of Vietnam, Fiscal Year 1972 (Saigon: National Bank of Vietnam, 1972), p. 9.

⁵U.S. Department of State, United States Agency for International Development, Vietnam Economic Data, July-September, 1973 (Washington, D.C.: United States Agency for International Development, 1973), p. 15.

⁶James D. Mictus, The Vietnamese Economy (Groton-on-Hudson, New York: Hudson Institute, 1968), p. 8.

more thorough analysis but did not cover all the aspects and time period of interest to this study.⁷

Employment

Employment figures were available for the United States element of this sector. These figures reflected Vietnamese nationals, third country nationals, and United States citizen civilians who were employed by United States civilian and military agencies and their contractors. These employment figures did not include Vietnamese domestic workers. These domestics were employed on an individual basis by private Allied citizens living in Vietnam or employees of private United States and third country companies doing business in South Vietnam not under contract to a United States agency. However, these workers were included in the sector employment analysis in Chapter IV. Total employment in the United States sub-sector increased from 13.6 thousand in 1964 to a peak of 175.0 thousand in 1969, then declined to 65.2 thousand at the close of the study in 1972. As a percent of the South Vietnam labor force this sub-sector was never more than 2.6 percent.⁸ The occupational breakout of the Vietnamese nationals employed in this sub-sector was approximately 35 percent construction workers, 64 percent service workers and

⁷ Buu Hoan, "The South Vietnamese Economy in the Transition to Peace and After," Asian Survey, Vol. XI, No. 4 (April 1971), pp. 308-309.

⁸ See Table 37 this Appendix.

1 percent retail workers.⁹ In terms of total national employment, this sector was not significant. Its importance, if any, rests in the fact that the work force in this sector possessed more advanced skills than most of the Vietnamese work force.¹⁰

Allied Military Personnel

A dimension of this sector, which had a decided impact on the economy of South Vietnam, was the number of Allied military personnel stationed in South Vietnam. The presence of Allied personnel reached a significant level in 1964 when there were 23.7 thousand Allied personnel stationed in South Vietnam. The tour of duty for most Allied personnel at that time was twelve months.¹¹ The number of Allied personnel continued to increase and reached a peak of 606.0 thousand at the end of 1968. After this peak, Allied personnel were gradually reduced, and at the close of 1972, there were only 92.9 thousand Allied personnel stationed in South Vietnam.¹²

⁹U.S. Department of State, Office of the Deputy Ambassador, U.S. Embassy, Saigon, "Occupational Characteristics of the Workforce of the U.S. Sector of the Economy of South Vietnam as of June 30, 1967" (Saigon: U.S. Embassy, 1968), Table 2, p. 7.

¹⁰Ibid., pp. 8-15.

¹¹Prior to February 1965, a limited number of officers and non-commissioned officers were accompanied by their families and their tour of duty was 24 months.

¹²See Table 38, this Appendix.

Currency Conversion

The spending of United States dollars converted to piasters in support of United States and Allied personnel in South Vietnam was reflected in the piaster purchases made by the United States Disbursing Officer from 1964 through 1972. In 1964, 42.0 million U.S. dollars were converted into piasters and used to meet United States government obligations in South Vietnam owed to United States personnel to meet private obligations. This level of expenditure continued to increase and reached a peak of 403.0 million U.S. dollars in 1971.¹³ Of course, some U.S. dollar instruments were converted to piasters through other than official channels. This was largely true because the unofficial (black market) rate of exchange averaged 50 percent above the official personal accommodation rate of exchange from 1964 through 1970.¹⁴

The piasters purchased by the United States were used to purchase goods and services from the Vietnamese economy. United States government and contractor expenditures of piasters were for salaries of Vietnamese employees, construction materials, utilities, real property and maintenance and repair services which were incidental to United States and Allied forces operations. Personal expenditures of piasters were made by United States and Allied personnel for services,

¹³See Table 39, this Appendix.

¹⁴Republic of Vietnam, Vietnam Statistical Yearbook, 1972, p. 247.

transportation, rent, goods and entertainment. These primary injections of spending in the domestic economy of South Vietnam had an obvious multiplier effect as each new round of spending created additional spending. The multiplier effect of United States spending in South Vietnam was estimated to be 1.82.¹⁵

Many of the piasters were exchanged illegally for dollar instruments (military payment certificates (MPC)). These dollar instruments enabled the local population to buy Post Exchange items even though they were not legally entitled to Exchange privileges in most cases. These illegal purchases of MPCs were estimated by national income experts of the Vietnam National Bank to be roughly 10 percent of the registered U.S. piaster purchases.¹⁶

Trade Balance

South Vietnam had a growing negative trade balance over the entire period of this study from 1955 through 1972. The trade balance radically increased from -276.6 million U.S. dollars in 1964 to a peak of -820.2 million U.S. dollars in 1969. Well over half of this trade deficit was financed by United States economic aid and assistance.¹⁷ A significant portion of United States aid was in the form of commercial imports of raw materials and consumables. Commercial imports

¹⁵Buu Hoan, "The South Vietnamese Economy in the Transition to Peace and After," p. 309.

¹⁶Ibid., p. 310.

¹⁷See Table 40, this Appendix.

which were financed under the United States economic assistance program increased from 112.7 million U.S. dollars in 1964 to 313.0 million U.S. dollars in 1972.¹⁸

An indication of the true over-all impact of the Allied sector was obtainable by combining the total United States economic aid and assistance with the United States purchase of piasters. When we compared this total with the expenditures on GNP in South Vietnam, the full impact of the Allied sector was brought into focus. For example, the value of United States economic aid and piaster purchases for 1966 was 115.0 billion piasters which was 48.7 percent of the 1966 GNP of South Vietnam. By 1972, United States aid and piaster purchases had increased to 425.2 billion piasters which was still 37.3 percent of the 1972 GNP. Over the years 1964 through 1972, United States economic aid and piaster purchases contributed an estimated annual average of 39.7 percent to the GNP of South Vietnam. Of course, the accuracy of this estimate of the United States sub-sector contribution to the GNP of South Vietnam was dependent upon the degree to which the exchange rates and multipliers used reflect the true value of economic transactions. However, the estimate was believed to be a fair evaluation of the general role which the Allied sub-sector played in the economy of South Vietnam from 1964 through 1972.

¹⁸See Table 41, this Appendix.

¹⁹See Table 42, this Appendix.

TABLE 37
UNITED STATES SUB-SECTOR EMPLOYMENT
IN SOUTH VIETNAM
(000)

Year	Vietnamese Nationals	Third Country Nationals	United States Nationals	Total	Percentage of Labor Force
1964	7.6	-	6.0	13.6	.2
1965	51.6	.1	8.0	59.7	1.0
1966	126.0	.2	10.0	136.2	2.3
1967	141.5	15.6	12.0	169.1	2.6
1968	140.0	18.9	13.3	172.2	2.6
1969	144.8	18.3	11.9	175.0	2.6
1970	126.5	10.7	10.0	147.2	2.1
1971	101.8	5.6	9.7	117.1	1.6
1972	54.7	2.7	7.8	65.2	.8

SOURCES: Data for 1964-1965 are adapted from Republic of Vietnam, Joint Postwar Planning Group (Draft) (Saigon, 1968), Part II, p. 12.

Data for 1966-1972 are adapted from Department of State, Agency for International Development, Vietnam Economic Data (Washington, D.C.: Agency for International Development), April-June 1974, p. 17.

Data for 1965-1966 regarding foreign workers allowed to reside in South Vietnam are extracted from Republic of Vietnam, Vietnam Statistical Yearbook, 1969 (Saigon: National Institute of Statistics, 1970), p. 350.

Data for 1964-1966 regarding United States Nationals allowed to reside in South Vietnam are author's estimates based on discussion with Vietnam desk officer, U.S. Department of State, Agency for International Development, Washington, D.C., during July 1975.

TABLE 37--Continued

NOTES: Data does not include domestic employees of United States civilian or military personnel but only employees of U.S. government agencies or their contractors (United States, Third Country and Vietnamese firms).

Employment of Vietnamese Nationals in the U.S. Sector prior to 1964 is included in the employment estimates for the appropriate sector, i.e., construction, clerical services, transportation, etc. See Appendix A.

TABLE 38
UNITED STATES AND ALLIED FORCES IN SOUTH VIETNAM
(000)

Year	Australia	Nationalist China	New Zealand	Philippines	South Korea	Thailand	United States	Total
1955	-	-	-	-	-	-	1.5	1.5
1956	-	-	-	-	-	-	1.0	1.0
1957	-	-	-	-	-	-	.9	.9
1958	-	-	-	-	-	-	.3	.3
1959	-	-	-	-	-	-	.3	.3
1960	-	-	-	-	-	-	.7	.7
1961	-	-	-	-	-	-	3.2	3.2
1962	-	-	-	-	-	-	9.9	9.9
1963	-	-	-	-	-	-	16.5	16.5
1964	.030	.031	-	-	.1	.016	23.0	23.2
1965	8.0	.031	.1	-	42.6	.016	184.3	235.0
1966	8.0	.031	.4	-	48.9	.2	385.3	444.0
1967	8.0	.031	.5	1.2	48.9	4.3	485.6	548.5
1968	8.0	.031	.5	1.2	48.9	11.3	536.1	606.0
1969	8.0	.031	.5	1.2	48.9	11.3	475.2	545.1
1970	8.0	.031	.5	.2	48.9	11.3	334.6	403.5
1971	8.0	.031	.5	-	48.9	11.3	156.8	225.5
1972	8.0	.031	.5	-	48.9	11.3	24.2	92.9

SOURCES: Data for 1964-1970 regarding Asian Allied forces are adapted from Republic of Vietnam, Viet-Nam Bulletin, (Washington, D.C.: Embassy of Vietnam) Info. Series 26 (March, 1970).

TABLE 38--Continued

Data for 1955-1958 regarding United States Forces are estimated by author based on discussion with U.S. Department of Defense officials.

Data for 1959-1960 regarding United States Forces are from U.S. Congress, Senate, Committee on Foreign Relations, Background Information Relating to Southeast Asia and Vietnam (Washington, D.C.: U.S. Government Printing Office), 6th rev. ed., 91st Cong., 2d sess., p. 6.

Data for 1961-1964 regarding United States Forces are from U.S. Congress, Senate, Republican Policy Committee, The War in Vietnam (Washington, D.C.: Government Printing Office), Vol. 113, No. 72, 90th Cong., 1st sess., Appendix 1, p. S56585.

Data for 1965-1972 regarding United States Forces are from U.S. Department of Commerce, Statistical Abstract of the United States, 1973, 94th ed., (Washington, D.C.: U.S. Government Printing Office), Table 428, p. 267.

NOTE: Data are as of the end of the year.

TABLE 39
UNITED STATES PIASTER TRANSACTION
IN SOUTH VIETNAM

Year	Piaster Purchases With Dollars By U.S. Disbursing Officer	
	VN\$ (Billion)	US\$ (Million)
1964	2.5	42.0 ^a
1965	- ^b	74.0
1966	- ^b	233.1
1967	19.2	202.8 ^c
1968	36.7	310.8 ^d
1969	40.9	346.7 ^d
1970	41.2	318.3
1971	74.0	403.0
1972	77.6	228.9

SOURCE: Department of State, Agency for International Development, Vietnam Economic Data, July-September 1973, No. 16 (Washington, E.C.: Agency for International Development, 1973), p. 19.

NOTE: Prior to 1964 piaster required for the payment of United States obligations in South Vietnam were generated by retention of 10 percent of total piasters from the sale of agricultural commodities in surplus in the United States as provided for in Title I of Public Law 480. See U.S. Department of State, Agency for International Development, Annual Statistical Bulletin, 1968, No. 11 (Washington, D.C.: Agency for International Development, 1968), p. 200.

^aU.S. expenditures were in the neighborhood of 5-10 million U.S. dollars higher according to International Monetary Fund (IMF) data. However, since these expenditures were by contractors, etc., who were permitted to deal directly with the commercial banks, they are not included above.

TABLE 39--Continued

^bImpossible to obtain piaster equivalents due to the fact that breakout between amounts purchased under the accommodation rate and the official rate are unavailable.

^c10.2 billion piasters purchased at 80 piasters per one U.S. dollar and 8.9 billion piasters purchased at 118 piasters per one U.S. dollar.

^dConverted at 118 piasters per one U.S. dollar.

TABLE 40
TRADE BALANCE AND PERCENTAGE FINANCING
OF IMPORTS, SOUTH VIETNAM
(US\$ 000,000)

Year	Exports (f.o.b.)	Imports (c.i.f.)	Trade Balance	Percentage Financing of Imports Arrivals		
				Government of Vietnam	United States AID	Third Country Other
1955	- ^a	-	-	-	-	-
1956	54.1	-345.9	-291.8	2.4	85.1	12.5
1957	89.1	-244.9	-155.8	3.3	92.4	4.3
1958	57.4	-182.2	-124.8	7.8	87.3	4.9
1959	61.8	-217.4	-155.6	10.2	88.5	1.5
1960	88.8	-234.6	-145.8	18.1	76.7	5.2
1961	71.6	-272.6	-201.0	38.5	57.7	3.3
1962	48.7	-268.7	-220.0	28.5	63.3	5.0
1963	83.5	-307.3	-224.0	24.6	68.8	4.8
1964	48.8	-325.5	-276.6	29.0	60.5	9.4
1965	40.5	-370.5	-330.0	22.0	71.4	5.9
1966	25.2	-656.6	-631.4	27.6	67.7	4.1
1967	57.7	-753.7	-716.0	38.9	58.3	2.0
1968	41.5	-688.7	-627.2	37.9	56.6	3.4
1969	33.0	-853.2	-820.2	44.4	53.7	1.9
1970	12.7	-778.8	-766.1	39.7	52.9	6.7
1971	14.7	-802.7	-788.0	42.2	52.4	2.9
1972	23.8	-742.9	-719.1	41.7	47.5	10.5

TABLE 40--Continued

SOURCES: Data for 1956-1969 are adapted from U.S. Department of State, United States Operations Mission to Vietnam, Annual Statistical Bulletin, 1964 (Washington, D.C.: United States Operations Missions, 1951), No. 8, p. 71.

Data for 1960-1961 are adapted from U.S. Department of State, United States Agency for International Development Vietnam, Annual Statistical Bulletin, 1969, (Washington, D.C.: United States Agency for International Development, 1969), No. 12, p. 10.

Data for 1962 are adapted from U.S. Department of State, United States Agency for International Development Vietnam, Annual Statistical Bulletin, 1971 (Washington, D.C.: United States Agency for International Development, 1971), No. 14, pp. 9-10.

Data for 1963 are adapted from U.S. Department of State, United States Agency for International Development Vietnam, Annual Statistical Bulletin, 1972 (Washington, D.C.: United States Agency for International Development, 1972), No. 15, pp. 9-10.

Data for 1964-1972 are adapted from U.S. Department of State, United States Agency for International Development Vietnam, Annual Statistical Bulletin, 1973 (Washington, D.C.: United States Agency for International Development, 1973), No. 16, pp. 9-10.

^aData for 1955 could not be disaggregated from Indochina statistics.

TABLE 41
UNITED STATES ECONOMIC AID TO SOUTH VIETNAM
(US\$ 000,000)

Year (Fiscal Years) ^a	AID Producing Counterpart Funds			AID Not Producing Counterpart Funds				AID Total	Loans Total	Total Economic AID
	Commercial Import ^b Program	PL-480 Title I ^c	Sub- Total	Project ^d Goods	Project Services	PL-480 Title II ^c	PL-480 Title III ^c			
1955	253.7	-	253.7	69.9	-	.7	1.5	325.8	0	325.8
1956	174.7	-	174.7	2.3	-	-	14.3	191.3	25.0	216.3
1957	210.9	-	210.9	22.4	-	-	22.8	256.1	25.0	281.1
1958	153.3	3.0	156.3	25.8	-	-	5.2	187.3	1.5	188.8
1959	146.4	-	146.4	34.7	-	-	6.5	187.6	19.5	207.1
1960	155.6	3.5	159.1	23.7	-	-	6.3	169.1	11.4	180.5
1961	111.2	5.0	116.2	10.7	-	-	4.5	131.4	13.2	144.6
1962	94.1	30.2	124.3	17.1	5.9	5.1	-	152.4	-	152.4
1963	95.0	26.5	121.5	23.4	8.9	29.2	-	183.0	-	183.0
1964	112.7	26.0	138.7	34.9	10.2	28.9	-	212.7	-	212.7
1965	151.6	50.7	202.3	49.7	19.3	10.3	-	281.6	-	281.6
1966	398.0	80.9	478.9	88.9	67.2	23.9	-	658.9	-	658.9
1967	132.6	139.0	271.6	183.0	177.9	32.8	-	665.3	-	665.3
1968	154.7	140.8	295.5	103.9	133.7	36.7	-	569.8	-	569.8
1969	130.0	76.7	206.7	57.8	135.5	33.9	-	433.9	-	433.9
1970	238.5	130.9	369.4	30.6	166.7	39.4	-	606.1	-	606.1
1971	281.0	108.2	389.2	26.7	132.6	33.2	-	561.7	-	561.7
1972	313.0	108.4	421.4	22.0	50.0	4.1	-	497.5	-	497.5

TABLE 41--Continued

SOURCES: Data for 1955-1959 are adapted from Department of State, United States Operations Mission to Vietnam, Annual Statistical Bulletin, 1962 (Washington, D.C.: United States Operations Mission, 1962), No. 6, p. 111.

Data for 1960-1961 are adapted from Department of State, United States Operations Mission to Vietnam, Annual Statistical Bulletin, 1963 (Washington, D.C.: United States Operations Mission, 1963), No. 7, p. 117.

Data for 1962-1965 are adapted from Department of State, United States Agency for International Development--Vietnam, Annual Statistical Bulletin, 1969 (Washington, D.C.: Agency for International Development), No. 12, p. 27.

Data for 1966-1972 are adapted from Department of State, United States Agency for International Development--Vietnam, Annual Statistical Bulletin, 1973 (Washington, D.C.: Agency for International Development), No. 16, p. 25.

^aUnited States fiscal years refers to a period beginning 1 July of one year and ending 30 June of the next, i.e., FY-1962 ended 30 June 1962.

^bUnder the Commercial Import Program (CIP) the United States funded imports of capital goods, fuels, raw materials and consumer goods for sale in commercial channels in South Vietnam. The United States provided grants of the dollars or other foreign exchange required. The importers paid for the goods in piasters (local currency), which was then deposited in a special account called the counterpart account. This account was used to finance United States operations in South Vietnam and South Vietnam government operations as agreed between the countries.

^cPublic Law 480, Food for Freedom, has three distinct provisions. Title I, Commodity Sales for Local Currency, provided for the sale of surplus United States agriculture commodities through commercial channels and the currency generated from these sales was generally granted to South Vietnam for military budget operations with some portion being

TABLE 41--Continued

returned to pay United States obligations in South Vietnam. The amount retained was 10% prior to 1966 and since that date the United States use varied from 0% to 100% in one case. Title II, Emergency Relief--Under this title, food was given to countries to help them meet famine or other extraordinary relief requirements. Title III, Donations to Voluntary Relief Agencies--Under this title, surplus agriculture commodities were donated to voluntary relief agencies for distribution to needy people.

^dproject aid and services was aid to the public sector to finance infrastructure, education, refugee, counter insurgency and other similar public projects.

^eLoans were for capita improvement projects and were all extended in dollars. Repayments of loan principal and interest was in piasters (local currency). As of 30 June 1967, 53.3 million in loans principal had been prepaid. Payments of interest and principal are indicated as the time payments were made by the government of South Vietnam.

TABLE 42
ESTIMATED UNITED STATES SUB-SECTOR CONTRIBUTION TO
GROSS NATIONAL PRODUCT OF SOUTH VIETNAM
(BILLION VNS)

Year	U.S. Piaster Purchases	U.S. Military Payment Certificate Leakage ^b	Total Piaster Conversions X 1.82 Multiplier ^c	AID Producing Counterpart Funds X 1.82 Multiplier	Project AID Funds X 1.82	PL-480 Title II No Multi- plier Used	Total Estimate Contribution	Expenditure in Gross National Product (GNP)	U.S. Sub- Sector Percent of GNP
1964	2.5	.25	5.0	29.8 ^d	5.32	3.4	43.5	114.5	38.0
1965	7.1a	.71	14.2	43.5 ^d	8.1	1.2	67.0	144.8	46.3
1966	22.3a	.22	41.0	52.8 ^d	18.4	2.8	115.0	236.2	48.7
1967	19.2	.19	35.3	58.2 ^d	42.6	3.8	139.9	356.7	39.2
1968	36.7	.38	67.5	63.5 ^d	28.0	4.3	163.3	385.3	42.4
1969	40.9	.41	75.2	44.4 ^d	22.8	4.0	146.4	557.6	26.3
1970	41.2	.41	75.7	184.9 ^e	54.3	9.3	324.2	804.4	46.3
1971	74.0	.74	136.0	210.4 ^f	43.8	9.1	399.3	1,024.0	39.0
1972	77.6	.78	142.7	259.7 ^g	21.6	1.2	425.2	1,139.0	37.3

SOURCES: Piaster conversion rates are from Department of State, Agency for International Development, Vietnam Economic Data (Washington, D.C.: Agency for International Development), April-June 1974, p. 26.

Other data from Tables 39 and 41 of this Appendix.

^aPiasters were purchased during this period at two rates, 73.5 piasters per \$1.00 and 118 piasters per \$1.00. Average conversion rate of 95.75 piasters per \$1.00 was used.

^bEstimated at 10% of official exchange transactions.

^cQuoted in BuuHoan, "The South Vietnamese Economy in the Transition to Peace and After," Asian Survey, Vol. XI, No. 4 (April, 1971), p. 309.

^dConverted at rate of 118 piasters per \$1.00.

^eConverted at rate of 275 piasters per \$1.00

^fConverted at rate of 400 piasters per \$1.00 for PL-480, Title I, and 275 piasters per \$1.00 for commercial import program.

^gConverted at rate of 450 piasters per \$1.00 for PL-480, Title I, and 300 piasters per \$1.00 for commercial import program.

APPENDIX C

PROPERTIES OF POLITICAL VIOLENCE EVENTS VARIABLES

1955 THROUGH 1972

PROPERTIES OF POLITICAL VIOLENCE EVENTS VARIABLES 1955 THROUGH 1972

Five basic political violence variables were selected for use in this study. These variables were employed to measure the impact of a wide range of political violence in South Vietnam from 1955 through 1972 on the national marketing development of that country. These indicators represented a continuum of the intensity of political instability ranging from mild political instability to extreme political instability over the period of the study.¹ Also, there was a continuum of the frequency of occurrence of destabilizing political violence events from very infrequent occurrence of some of the variables to very frequent occurrence of most of the variables.

The literature review regarding the use of indicators of political violence, presented in Chapter III, suggests

¹Political violence events have been weighted by other researchers for use in cross-polity studies by ordering the events into a scale. See Betty A. Nesvold, "Scalogram Analysis of Political Violence," Comparative Political Studies, Vol. 2, No. 2 (July, 1969), pp. 172-194, and Ivo K. Feierabend and Rosalind L. Feierabend, "Aggressive Behavior Within Politics, 1948-1962: A Cross-National Study," Journal of Conflict Resolution, Vol. X, No. 3 (September, 1966), pp. 251-256

that the five variables selected for use in this study best represent the underlying dimension of political violence in South Vietnam. A sixth political violence variable, which included both the intensity and frequency aspect of the basic five political violence variables, was generated by cumulating the basic variables into an index of political violence on both an annual and quarterly basis.

Definitions

Political violence events variables are defined² as follows and are listed in ascending order of political instability.³

Protest Demonstrations (Code PRDEM506):⁴ A non-violent gathering of people organized for the announced purpose of protesting against a regime, government or one or more of its leaders; or against its ideology, policy, intended policy or lack of policy; or against its previous action or intended action.

²The political violence events, their definitions and grouping, are compiled from Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven: Yale University Press, 1972), pp. 59-70.

³Betty A. Nesvold, "Scalogram Analysis of Political Violence," and Ivo K. Feierabend and Rosalind L. Feierabend, "Aggressive Behavior Within Politics, 1948-1962: A Cross-National Study."

⁴Codes have been used for easy reference in computer application.

Government Sanction (Code GVTSA519): An action taken by the authorities to neutralize, suppress or eliminate a perceived threat to the security of the government, the regime or the state itself.

Riots (Code RTOTS501): A violent demonstration or disturbance involving a large number of people. "Violence" implies the use of physical force and is usually evidenced by the destruction of property, the wounding or killing of people by authorities, the use of riot control equipment, such as clubs, gas, guns or water cannons, and by the rioters' use of various weapons.

Armed Attacks (Code ARATK504): An act of violent political conflict carried out by (or on behalf of) an organized group with the objective of weakening or destroying the power exercised by another organized group.

Deaths from Political Violence (Code DFMPV502): Unlike the other indicators, the number of deaths from political violence is not an event variable, but a body count. The deaths reported occur mainly in conjunction with armed attacks, but also with riots and to a lesser extent with demonstrations.

Cumulative Political Violence Events Index (Code ACPVIND): The five political violence events variables are summed to form a gross indicator of the intensity and frequency of political violence on both an annual and quarterly basis.

Sources of Political Violence Events Data

The annual political violence events data used in the study were provided on computer tape by the Inter-University Consortium for Political Research, the University of Michigan, for the years 1955 through 1967. The quarterly political violence events data for the years 1955 through 1967 were compiled by this researcher from a daily events data file which also was provided on computer tape by the Inter-University Consortium for Political Research. The annual political violence events data for the years 1955 through 1967 are also published in the World Handbook of Political and Social Indicators.⁵ The daily political violence events data have not been published as a separate series.

The scope of this study required that the annual and quarterly political violence events data for the years 1968 through 1972 be developed. This extension of the political violence events data series was approached by this researcher on the same basis and utilizing the same techniques as those employed by the Inter-University Consortium for Political

⁵Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators (New Haven: Yale University Press, 1972), pp. 88-123.

Research. The New York Times Index was used as the source.⁶ The political violence events data were extracted, organized, classified, coded and summarized, utilizing the same rules used by the coders who developed the political events data for the World Handbook of Political and Social Indicators.⁷

Two coders were utilized to extend the political violence events data series. Both coders were experienced in the social sciences and data collection. Coder number one coded years 1969, 1971 and 1972. Coder number two coded years 1968 and 1970. In a sample of each coder's work, no variance was found in the following political events data: protest demonstrations, government sanctions, and riots.

⁶The New York Times Index was used as the primary source for political violence data concerning South Vietnam. See Taylor and Hudson, World Handbook of Political and Social Indicators, pp. 417, 418. The New York Times sources consulted were: The New York Times Company, The New York Times Index, 1968 (New York: The New York Times, Inc., 1969), Vol. 56, pp. 1562-1656. The New York Times Company, The New York Times Index, 1969 (New York: The New York Times, Inc., 1970), Vol. 57, pp. 1796-1882. The New York Times Company, The New York Times Index, 1970 (New York: The New York Times, Inc., 1971), Vol. 58, pp. 2121-2222. The New York Times Company, The New York Times Index, 1971 (New York: The New York Times, Inc., 1972), Vol. 59, pp. 1864-1948. The New York Times Company, The New York Times Index, 1972 (New York: The New York Times, Inc., 1973), Vol. 60, pp. 2374-2666.

⁷See Appendix 1 "The Collection of Political Events Data," Taylor and Hudson, World Handbook of Political and Social Indicators, pp. 391-423, and Charles Lewis Taylor and Michael C. Hudson with collaboration of Katherine H. Dolan, Edwin G. Dolan, John T. Dow and John D. Sullivan, World Handbook of Political and Social Indicators II (Code Books I-III) (Ann Arbor: Inter-University Consortium for Political Research, University of Michigan, 1970).

A variance of only .02 percent was found in armed attacks. Deaths from political violence reflected a variance of .05 percent.

Codification

Each coder was equipped with the above operational definitions for each political violence event variable. The following specific coding rules were provided to each coder.⁸ In order to minimize confusion and insure accuracy, the rules were stated in terms which would establish the identity of an event within a class (variable series) or establish the fact that the event did not belong to a particular class (variable series). A short training period was conducted after which the rules were slightly revised to improve clarity and uniformity of coding.

Protest Demonstration (Code PRDEM506): This Variable Is--

- Protest issues which are perceived as significant at the national level.
- All protest directed at all branches and levels of government.
- All demonstrations for or against a foreign (government outside South Vietnam) government, its leaders or visiting representatives.
- Any organized opposition to or demonstration against the government of South Vietnam by any of the people of South Vietnam (to include the Viet Cong or other rebel groups).

⁸These coding rules were consistent with and amplifications of the rules used by the coders of the World Handbook of Political and Social Indicators.

--A non-violent gathering of people which has a measurable beginning and terminates peacefully.

. This Variable Is Not--

--Organized and formal election meetings, rallies and boycotts.

--Acts of protest carried out by individuals or very small groups (25 or less).

--Organized boycotts of government services, unless it is directed against the political element of the government.

A protest demonstration which escalates into violent actions of property destruction and bloodshed which is a riot. It would be coded as first a protest demonstration and then as a riot if it becomes violent.

Government Sanctions (Code GVTSA519): This Variable Is--

--A specific government response to a perceived security problem at the national level.

--A sanction which may be carried out at some sub-national level.

--Government action against perceived internal or external threats or interference.

--Specifically, Censorship is an action to limit, curb or intimidate the mass media; including newspapers, magazines, books, radio or television. (Typical censorship is actions to close newspapers or censor articles of domestic press or dispatches sent out of the country.)

--The restriction of political participation, such as martial law, mobilizing troops for domestic security, or instituting a curfew. Can be action against a party, individual or organization. The banning of political parties and activities or acts of harassment such as denying a permit to hold a public meeting. The arrest of opposition politicians on grounds of state security, the exiling or deportation of persons for political action, and the arrest or detention of persons for involvement or reported involvement in political protest actions.

- Espionage, is an action by the authorities in which one or more persons (nationals or foreigners) are arrested or detained on charges of spying, sabotage or prohibited interference in the domestic politics of the state constituting a threat to internal security.

This Variable Is Not--

- A protest demonstration, riot, armed attack or death from political violence. (These may also occur in connection with a government sanction and are coded separately.)
- Easily determinable because it is difficult to ascertain when a sanction begins and when it ends.

Riots (Code RTOTS501): This Variable Is--

- Characterized by spontaneity and tumultuous group behavior.
- Either a planned or unplanned event.
- A situation in which the riot organizers and planners are often a small part of the total riot group.
- Characterized by the fact that most of the people involved are violently agitated in their behavior.
- Made up of people in a crowd or mob who are excited or confused, and who engage in unpredictable acts of disorder.
- An apparent spontaneous event.
- An event in which the objective of the violence seems to be closely related to the objects of the rioters' political discontent to a dispassionate observer.
- Rioters who often number 100 or more persons but may be reported as a riot if only tens are involved.
- An event which involves physical force and results in the destruction of property and bloodshed, both by the rioters and the government.
- Always countered by the government with force.
- An event which may take place in a ruling body of government.

This Variable Is Not--

- Violent raids against property and persons--this is an armed attack--if directed against the government, and a government sanction if directed by the government against some group.
- A peaceful demonstration, but it may begin as one and then expand into a riot by taking on the dimension of violence.
- A planned attack which has organization, targets and objectives and then withdraws--this is an armed attack.

Armed Attacks (Code ARATK504): This Variable Is--

- Characterized by bloodshed, physical struggle or the destruction of property.
- An event which employs a wide variety of weapons such as guns, explosives, aircraft, bombs, chemicals, etc.
- An event which includes all organized political violence in a political system.
- An event in which the target of the attack is the regime, government or political leader, or its ideology, policy or actions; but it may also be a religious, ethnic, racial, linguistic or special interest minority.
- One which includes both friendly and enemy attacks.
- A government action or attack which is greater than normal punitive measures which are coded as government sanctions.
- Exemplified by attacks on government buildings, personnel, public utilities, roads and transport facilities, dwelling places, factories and markets. (Whole villages may be the target and are often reported as acts of sabotage, terrorism or liberation.)

This Variable Is Not--

- Acts of non-political violence (criminal acts) government sanctions.
- Protest demonstrations and riots.
- Confrontations of the armed forces of two or more countries in a situation of international wars.
- Assassinations.

Deaths from Political Violence (Code DIMPV502): This

Variable Is--

- Persons of South Vietnam who die participating in foreign interventions in the country, but it does not include foreigners.
- A body count of South Vietnamese both friendly and enemy.

This Variable Is Not--

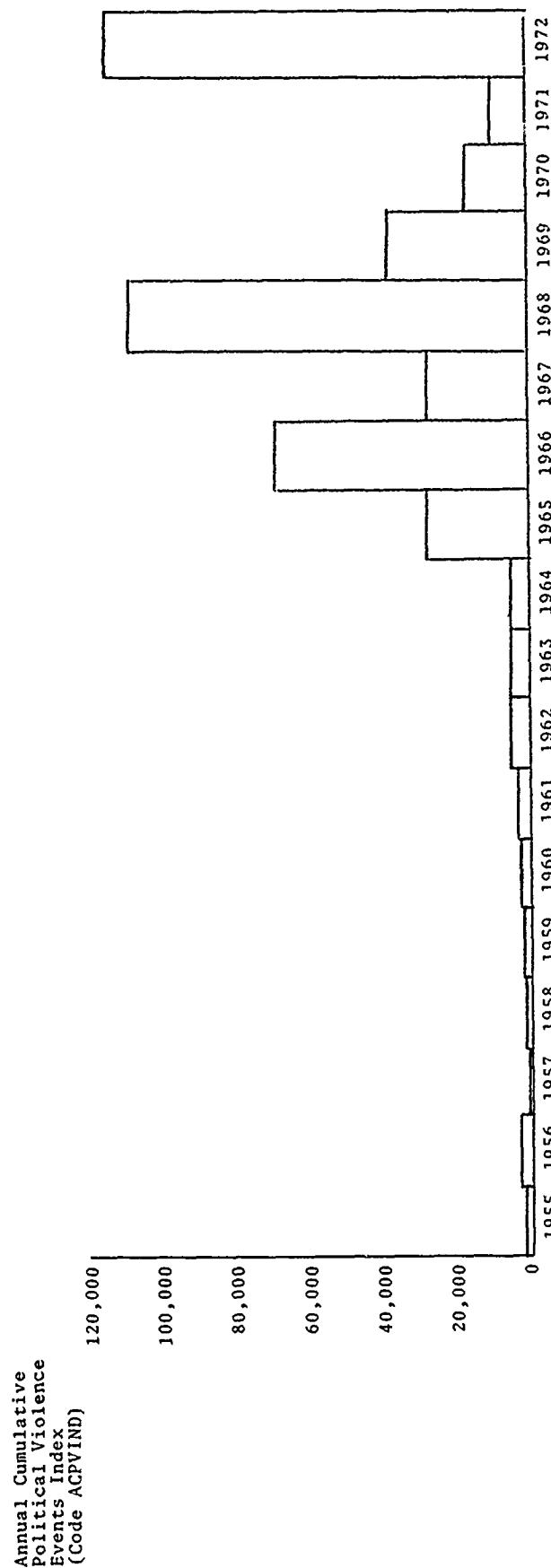
- Foreigners (people not South Vietnamese).
- Assassinated victims.
- Victims of political executions, deaths in enemy prisons, deaths in formal warfare or deaths in border incidents with other countries which occur outside South Vietnam.
- Victims of ordinary criminal homicide.
- Reports which specify "casualties" or "victims"; it is "deaths" only.

Statistical Characteristics of Political
Violence Events Data

The annual and quarterly political violence events data were organized into tables for easy reference. See Tables 43 and 44. The reader should keep in mind the three political violence time periods; "Pre-Insurgency"--1955 through 1960; "Insurgency"--1961 through 1964; and "Limited War"--1965 through 1972. The annual and quarterly cumulative political violence indices were graphed in histograms to portray changes in the intensity and frequency of political violence. See Figures 38 and 39. There was an ever increasing intensity and frequency of political violence over the entire development period as reflected in both the annual and quarterly cumulative political violence indices.

Significant peaks and valleys were evident in these political violence indices which reflected the constantly changing impact of political violence. The basic political violence events variables were not charted, but their dimensions will be discussed.

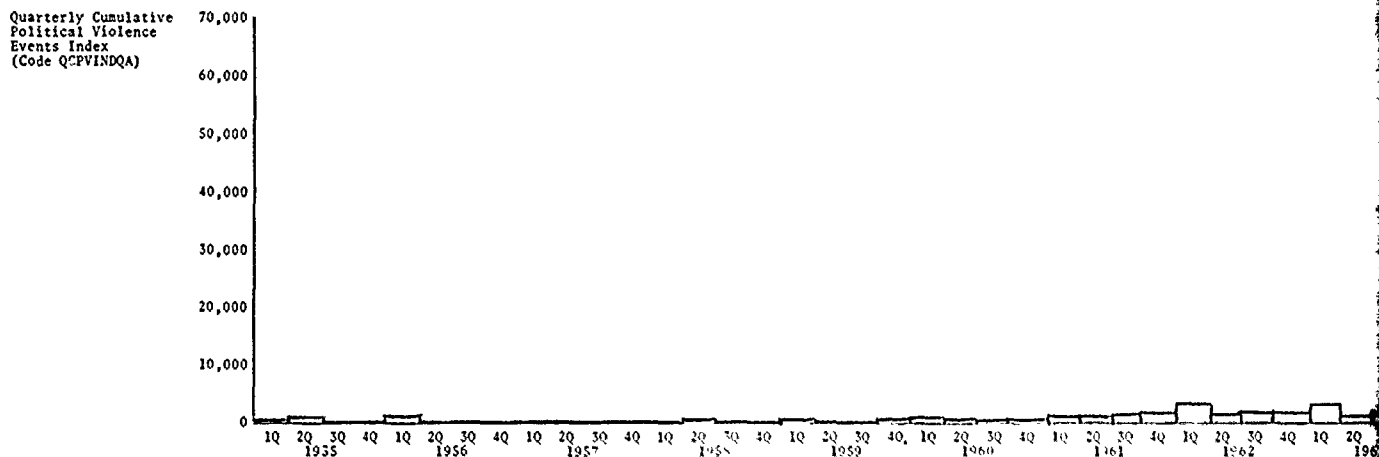
The dimensions of both annual and quarterly basic political violence events data were summarized in Tables 45 and 46. Most of the political violence variables had a wide range between their maximum and minimum values, since most of these indicators had minimum values of less than twenty events. These events largely occurred during the "pre-insurgency" time period. There was a wide separation between the mean and median values in each series because of wide variance. The measures of dispersion such as the standard deviation, variance and coefficient of variation indicate that there were wide dispersions of the data in most of the series about their means. It is also interesting to note that all of the data series were positively skewed to the right. This was no doubt caused by the high increase in the frequency of all political violence variables during the "limited war" time period. As mentioned earlier, all of the political violence series contained significant peaks in their distributions as indicated by the relatively large moment coefficients of kurtosis with each distribution experiencing a leptokurtic condition.



SOURCES: Data for 1955-1967 are provided on computer tape from the Inter-University Consortium for Political Research, the University of Michigan, Ann Arbor, Michigan, and published in Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven: Yale University Press, 1972), pp. 88-123.

Data for 1968-1972 are adapted from political violence events data contained in New York Times Indices, 1968-1972. See this appendix for coding rules and other details.

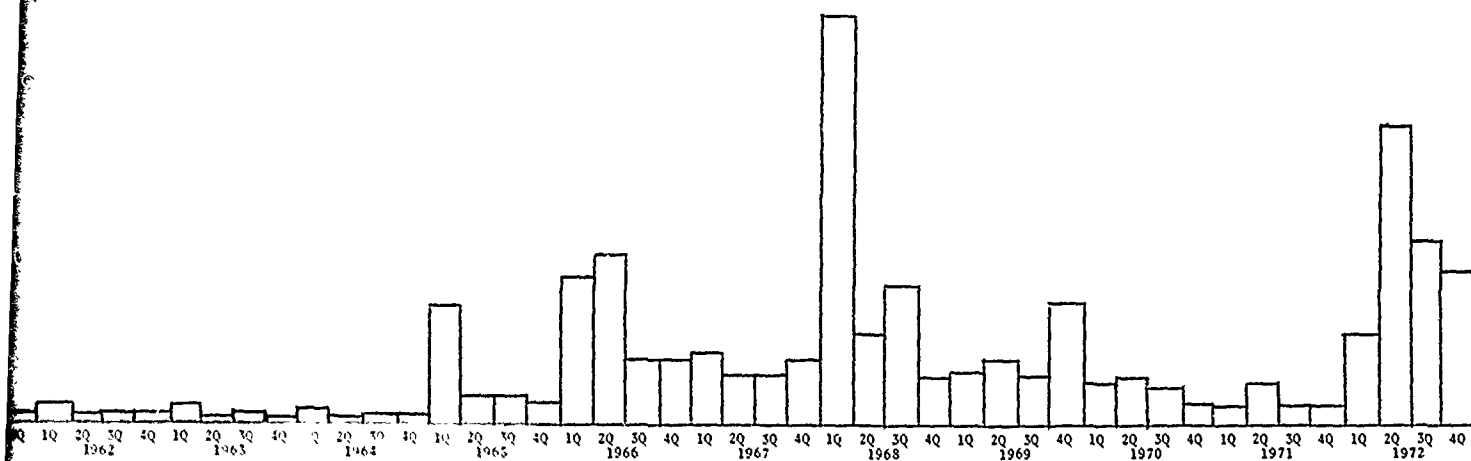
Fig. 38. Annual cumulative political violence events in South Vietnam.



SOURCE: Data for 1955-1967 are provided on computer tape from the Inter-University Consortium for Political Research, the University of Michigan, Ann Arbor, Michigan Press, 1972), pp. 88-123.

Data for 1968-1972 are adapted from political violence events data contained in New York Times Index, 1968-1972. See this appendix for coding rules and other

Fig. 39. Quarterly cumulative political violence



of Michigan, Ann Arbor, Michigan, and published in Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven: Yale Univ-

for coding rules and other details.

ly cumulative political violence events in South Vietnam.

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TABLE 43
ANNUAL POLITICAL VIOLENCE EVENTS IN SOUTH VIETNAM

Year	Protest Demonstrations (Code PRDEM506)	Government Sanctions (Code GVTSA519)	Riots (Code RIOTS401)	Armed Attacks (Code ARATK504)	Deaths From Political Violence (Code DFMPV502)	Total Political Violence Events (Code ACPVIND)
1955	2	14	6	113	961	1,096
1956	-	9	-	4	1,998	2,011
1957	-	6	-	4	9	19
1958	-	4	-	13	375	392
1959	-	2	-	7	676	685
1960	1	7	-	43	686	737
1961	-	8	-	127	3,259	3,394
1962	-	28	-	234	6,570	6,832
1963	54	67	7	191	5,667	5,986
1964	22	44	40	686	5,392	6,184
1965	29	103	15	598	31,733	32,478
1966	77	136	19	917	69,371	70,520
1967	12	50	6	556	32,557	33,181
1968	21	69	-	10,808	102,547	113,445
1969	1	23	11	8,262	39,319	47,616
1970	29	22	8	5,156	13,019	18,234
1971	41	10	32	3,282	9,121	12,486
1972	4	60	-	22,894	96,729	119,687

SOURCES: Data for 1955-1967 are provided on computer tape from the Inter-University Consortium for Political Research, the University of Michigan, Ann Arbor, Michigan, and

TABLE 43--Continued

published in Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators, 2nd ed. (New Haven: Yale University Press, 1972), pp. 88-123.

Data for 1968-1972 are adapted from political violence events data contained in New York Times Indices, 1968-1972. See this appendix for coding rules and other details.

TABLE 44
QUARTERLY POLITICAL VIOLENCE EVENTS IN SOUTH VIETNAM

Year/ Quarter	Protest Demonstrations ^a (Code BPRDEM506A)	Government Sanctions (Code BGVTSAS19A)	Riots (Code BRTOTS501A)	Armed Attacks (Code BARATK504A)	Deaths from Political Violence (Code BDFPV502A)	Total Political Violence Events (Code QCPVINDQA)
1955 1Q	-	1	-	13	155	169
2Q	1	9	1	66	802	879
3Q	1	1	5	27	4	38
4Q	-	3	-	7	-	10
1956 1Q	-	3	-	-	99	1,993
2Q	-	1	-	2	3	6
3Q	-	2	-	2	5	9
4Q	-	3	-	-	-	3
1957 1Q	-	3	-	-	8	11
2Q	-	1	-	1	1	3
3Q	-	1	-	-	-	1
4Q	-	1	-	3	-	4
1958 1Q	-	1	-	-	1	4
2Q	-	1	-	12	336	349
3Q	-	-	-	1	58	39
4Q	-	-	-	-	-	-
1959 1Q	-	-	-	-	374	374
2Q	-	1	-	5	-	6
3Q	-	-	-	1	2	3
4Q	-	1	-	1	300	302
1960 1Q	-	-	-	1	325	326
2Q	-	-	-	7	94	101
3Q	1	4	-	14	156	175
4Q	-	3	-	21	111	135

TABLE 44--Continued

Year/ Quarter	Protest Demonstrations ^a (Code BPRDEM506A)	Government Sanctions (Code BGV TSA519A)	Riots (Code BRTOTS501A)	Armed Attacks (Code BARATK504A)	Deaths from Political Violence (Code BDFPV502A)	Total Political Violence Events (Code QCPVINQQA)
1961 1Q	-	-	-	13	858	871
2Q	-	3	-	39	613	655
3Q	-	2	-	35	807	844
4Q	-	3	-	40	981	1,024
1962 1Q	-	13	-	24	3,275	3,312
2Q	-	8	-	87	1,152	1,247
3Q	-	5	-	64	1,188	1,257
4Q	-	2	-	59	955	1,016
1963 1Q	-	2	-	18	3,964	3,984
2Q	16	8	3	50	476	553
3Q	31	41	4	65	913	1,054
4Q	7	16	-	58	314	395
1964 1Q	1	12	-	55	2,505	2,573
2Q	1	11	1	116	638	767
3Q	10	10	35	453	1,180	1,688
4Q	10	11	4	62	1,069	1,156
1965 1Q	21	13	13	69	21,928	22,044
2Q	5	44	2	116	3,619	3,786
3Q	2	41	-	260	3,527	3,850
4Q	1	5	-	153	2,659	2,818
1966 1Q	25	20	-	186	24,376	24,607
2Q	52	68	19	82	28,440	28,661
3Q	-	34	-	569	8,260	8,863
4Q	-	14	-	80	8,295	8,589

TABLE 44--Continued

Year/ Quarter	Protest Demonstrations ^a (Code BPRDEN506A)	Government Sanctions (Code BGV TSA519A)	Riots (Code BRTOTSS501A)	Armed Attacks (Code BARATK504A)	Deaths from Political Violence (Code BDFPV502A)	Total Political Violence Events (Code QCPVINDDQA)
1967 1Q	-	14	-	94	12,079	12,187
2Q	-	5	1	119	5,274	5,399
3Q	6	19	1	251	5,618	5,895
4Q	6	12	4	92	9,586	9,700
1968 1Q	13	27	-	4,739	63,222	68,001
2Q	4	15	-	3,246	11,717	14,982
3Q	3	13	-	1,199	21,933	23,148
4Q	1	14	-	1,624	5,675	7,314
1969 1Q	-	10	1	2,811	5,793	8,615
2Q	-	6	-	2,284	8,513	10,803
3Q	-	1	-	1,806	6,135	7,942
4Q	1	6	10	1,361	18,878	20,256
1970 1Q	2	1	-	817	4,549	5,369
2Q	26	11	6	2,303	4,690	7,036
3Q	-	8	1	1,297	2,610	3,916
4Q	1	2	1	739	1,170	1,913
1971 1Q	1	6	-	603	495	1,105
2Q	-	4	-	1,291	6,450	7,745
3Q	35	-	12	790	1,031	1,868
4Q	5	-	20	598	1,145	1,768
1972 1Q	-	-	-	3,254	10,306	13,560
2Q	1	3	-	9,895	40,419	50,318
3Q	-	57	-	5,146	25,780	30,983
4Q	3	-	-	4,599	20,224	24,826

TABLE 44--Continued

SOURCES: Data for 1955-1967 are provided on computer tape from the Inter-University Consortium for Political Research, the University of Michigan, Ann Arbor, Michigan.

Data for 1968-1972 are adapted from political violence events data contained in New York Times Indices, 1968-1972. See this appendix for coding rules and other details.

^aVariables have been coded for ease in computer application.

TABLE 4S
DIMENSIONS OF ANNUAL POLITICAL VIOLENCE EVENTS VARIABLES

Political Violence Event Variables	Statistics								
	Maximum Value	Minimum Value	Mean	Median	Standard Deviation	Variance	Coefficient of Variation	Moment Coefficient of Skewness	Moment Coefficient of Kurtosis
Protest Demonstrations (Code PRDEM506) ^a	77.0	-	16.278	3.0	21.768	501.740	1.3373	1.3962 Right	4.1175 Leptokurtic
Government Sanctions (Code GVTSAS519)	136.0	2.0	36.778	22.5	36.808	1,434.500	1.0008	1.2565 Right	3.7786 Leptokurtic
Riots (Code RTOTS501)	40.0	-	8.000	3.0	11.460	13.906	1.4325	1.6119 Right	4.620 Leptokurtic
Armed Attacks (Code ARATK504)	22,894.0	4.0	2,994.300	395.0	5,712.000	34,546,000.000	1.9077	2.4567 Right	8.4598 Leptokurtic
Deaths from Political Violence (Code DFMPV502)	102,555.0	9.0	23,333.000	6,118.5	52,379.000	1,110,100,000.000	1.3877	1.4704 Right	3.7915 Leptokurtic
Cumulative Political Violence Events Index (Code ACPVIND)	119,690.0	19.0	26,388.000	6,508.0	57,031.000	1,452,000,000.000	1.4033	1.5622 Right	4.1534 Leptokurtic

SOURCE: Political violence data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

^aVariables have been coded for ease in computer application.

TABLE 46
DIMENSIONS OF QUARTERLY POLITICAL VIOLENCE EVENTS VARIABLES

Political Violence Events Variables	Statistics								
	Maximum Value	Minimum Value	Mean	Median	Standard Deviation	Variance	Coefficient of Variation	Moment Coefficient of Skewness	Moment Coefficient of Kurtosis
Protest Demonstrations (Code PRDEMS06A) ^a	52.0	-	4.0694	-	9.3457	88.571	2.2965	3.1235 Right	13.229 Leptokurtic
Government Sanctions (Code BGVTSAS19A)	68.0	-	9.1944	3.5	13.3110	179.680	1.4477	2.4975 Right	9.4501 Leptokurtic
Riots (Code BRTOTS01A)	35.0	-	2.0000	-	5.5777	31.549	2.7889	3.9393 Right	20.152 Leptokurtic
Armed Attacks (Code BARATKS04A)	9,895.0	-	248.5400	65.5	1,594.9000	2,579,400.000	2.1306	3.4350 Right	17.106 Leptokurtic
Deaths from Political Violence (Code BDFMPVS02A)	63,222.0	-	5,833.2000	-	10,544.0000	112,750,000.000	1.8077	3.1255 Right	1.4674 Leptokurtic
Cumulative Political Violence Events Index (Code QACPVINDQA)	68,001.0	-	6,597.0000	1,472.5	11,716.0000	139,200,000.000	1.7760	3.0642 Right	1.3938 Leptokurtic

SOURCE: Political violence data as provided in the study have been processed utilizing Leasco Response, Inc., Regression Statistics (LEASTAT) software computer package in an IBM-360 computer system.

^aVariables have been coded for ease in computer application.

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